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EG&G

ROCKY FLATS

1994 Annual RCRA Groundwater Monitoring Report for Regulated Units at the Rocky Flats Environmental Technology Site

Rocky Flats Environmental Restoration Project

February 1995

1.0 INTRODUCTION

The 1994 Annual Resource Conservation and Recovery Act (RCRA) Groundwater Monitoring Report presents the groundwater-monitoring data and evaluations for the three interim-status RCRA-regulated units at the Rocky Flats Environmental Technology Site (RFETS). The three RCRA-regulated units are the Solar Evaporation Ponds, the West Spray Field, and the Present Landfill. Title 6 of the Code of Colorado Regulations (CCR), Chapter 1007, Article 3, Part 265, Subpart F requires groundwater monitoring at these three RFETS units. This report satisfies the recordkeeping and reporting requirements of this regulation (sec. 265.94), and assesses the 1994 groundwater-elevation and groundwater-quality data, as available on December 16, 1994. These data are presented in Appendices A and B.

Background information for the RCRA groundwater-monitoring program is presented in the following subsections.

- Section 1.1 summarizes the groundwater-monitoring requirements for interim-status RCRA facilities.
- Section 1.2 describes past groundwater-monitoring activities at RFETS.
- Section 1.3 discusses the groundwater-monitoring approach and the interpretation of the uppermost "aquifer" for RCRA-regulated units at RFETS.
- Section 1.4 describes the methods used to determine impacts to groundwater quality beneath each of the RCRA-regulated units.

1.1 RCRA Groundwater-Monitoring Requirements

The 6 CCR 1007-3, sec. 265.90(a) requires implementation of a groundwater-monitoring program that is "capable of determining the facility's impact on the quality of groundwater in the uppermost aquifer underlying the facility." Groundwater-monitoring requirements of sec. 265.90 et seq. are delineated in the following subsections:

- 265.91 - Groundwater-Monitoring System
- 265.92 - Sampling and Analysis
- 265.93 - Preparation, Evaluation, and Response
- 265.94 - Recordkeeping and Reporting.

Under sec. 265.90(d), if the owner or operator assumes (or knows) that groundwater monitoring in accordance with secs. 265.91 and 265.92 would show statistically significant increases in groundwater contamination when evaluated according to requirements of sec. 265.93(b), the operator may install, operate, and maintain an alternate groundwater-monitoring system.

Because previous evaluations in accordance with secs. 265.93(b) and 265.93(c)(2) established that the Solar Evaporation Pond area had affected groundwater quality downgradient of the unit, a groundwater-quality assessment program was developed and implemented to satisfy sec. 265.93(d). Because releases with potential impacts to downgradient water quality are assumed to have occurred at the West Spray Field and at the Present Landfill, alternate groundwater-monitoring plans were developed and implemented for these two units. Descriptions of the groundwater-monitoring programs developed for each unit are included in the Final Groundwater Assessment Plan (GWAP) [U.S. Department of Energy (DOE), 1992b]. The GWAP integrates the RCRA interim-status groundwater-monitoring requirements with the requirements of the Interagency Agreement (IAG). In accordance with sec. 265.90(b), interim-status groundwater monitoring at each RCRA-regulated unit will continue through the post-closure care period until final closure of the facility.

1.2 History of Groundwater Monitoring at the RFETS

Since 1960, groundwater monitoring for radionuclides and other chemical constituents has been conducted at RFETS. Between 1960 and 1985, 56 wells were installed and routinely sampled for radionuclides. Starting in 1985, the sampling and analysis program was modified to include additional analytes including volatile organic compounds (VOCs), metals, and major ions.

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LIST OF ACRONYMS

ANOVA	analysis of variance
BDL	below detection limit
CCR	Code of Colorado Regulations
CEARP	Comprehensive Environmental Assessment and Response Program
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CLP	Contract Laboratory Program
cm/sec	centimeter/second
CMS	Corrective Measure Study
CUSUM	Cumulative-Sum
DOE	U.S. Department of Energy
EMD	Environmental Management Division
EPA	U.S. Environmental Protection Agency
FS	Feasibility Study
ft	feet
GRRASP	General Radiochemistry and Routine Analytical Services Procedures
GWAP	Groundwater Assessment Plan
HSL	Hazardous Substance List
IAG	Interagency Agreement
IHSSs	Individual Hazardous Substance Sites
IM/IRA	Interim Measure/Interim Remedial Action
in	inches
LHSU	lower hydrostratigraphic unit
OOC	out-of-control
PARCC	precision, accuracy, representativeness, completeness, and comparability
QAPjP	Quality Assurance Project Plan
RCRA	Resource Conservation and Recovery Act
RFEDS	Rocky Flats Environmental Database System

LIST OF ACRONYMS (CONCLUDED)

RFETS	Rocky Flats Environmental Technology Site
RFI	RCRA Facility Investigation
RI	Remedial Investigation
RPD	relative percent difference
SVOCs	semi-volatile organic compounds
TAL	Target Analyte List
TCL	Target Compound List
TSS	total suspended solids
UHSU	upper hydrostratigraphic unit
VOCs	volatile organic compounds
WARP	well abandonment and replacement program

EXECUTIVE SUMMARY

The 1994 Annual Resource Conservation and Recovery Act (RCRA) Groundwater Monitoring Report presents the results for the 1994 groundwater-monitoring program conducted at the three interim-status RCRA-regulated units at the Rocky Flats Environmental Technology Site (RFETS). The three regulated units at RFETS are the Solar Evaporation Ponds, the West Spray Field, and the Present Landfill. The RCRA groundwater-monitoring program at RFETS is conducted in compliance with Colorado Hazardous Waste Act Regulations 6 CCR 1007-3, Subpart F, sec. 265.90 for RCRA interim-status, waste-management units. The purpose of the RCRA groundwater-monitoring programs at RFETS is to assess the impact of waste-management activities at the RCRA-regulated units on groundwater quality in the uppermost hydrostratigraphic unit beneath and hydraulically downgradient of the RCRA units.

This report assesses each of the three RCRA-regulated units for the presence of hazardous waste or hazardous-waste constituents in groundwater-monitoring wells located hydraulically downgradient of the unit and presents an evaluation of the nature and extent of hazardous waste or hazardous-waste constituents in groundwater within the RCRA-regulated units. This assessment has been conducted by statistically comparing groundwater-quality data from upgradient monitoring wells to data from downgradient monitoring wells. Methods of statistical comparisons of groundwater-quality data are based on guidance from the U.S. Environmental Protection Agency (EPA, 1989; 1992a). The results of the statistical comparisons made for each RCRA unit are discussed throughout the report. The nature and extent of contamination was evaluated by assessing the spatial distribution of constituents associated with past waste-management practices at each RCRA unit. Where applicable, groundwater quality within each RCRA unit was also characterized by comparing analytical data with sitewide background values (defined as the mean plus two standard deviations) for the chemical parameters presented in the 1993 Background Geochemical Characterization Report (EG&G, 1993b).

The analytical data used to make the statistical comparisons and to evaluate the nature and extent of contamination in groundwater were evaluated for conformance with EG&G and EPA quality assurance/quality control guidelines. The quality of the data was evaluated in terms of precision, accuracy, representativeness, completeness, and comparability (PARCC parameters).

The Solar Evaporation Ponds unit is currently undergoing groundwater assessment monitoring because it has been shown that leakage from the ponds has adversely impacted groundwater quality in the uppermost hydrostratigraphic unit. Review of potentiometric-head data collected in 1994 and previous years indicates that large areas of surficial materials are unsaturated, and that groundwater in surficial materials flows from the Solar Evaporation Ponds northeast toward North Walnut Creek and east-southeast toward South Walnut Creek. Groundwater in weathered bedrock generally flows to the north-northeast. Groundwater-quality data from 1994 indicate that the solar ponds contribute inorganic analytes (primarily nitrate/nitrite), radionuclides, and volatile organic compounds (VOCs) to downgradient wells screened in surficial materials immediately east and southeast of the ponds. VOCs were also detected in wells screened in surficial material north and northwest of the solar ponds. Nitrate/nitrite, radionuclides, VOCs, and other inorganic parameters were also present at concentrations above background in weathered-bedrock groundwater, especially immediately north of the solar ponds and also downgradient of the Interceptor Trench System. VOCs were also detected in weathered bedrock upgradient of the unit. The presence of these chemicals in groundwater from both surficial materials and weathered bedrock downgradient of the Interceptor Trench System indicates that contaminants may have migrated beyond the intercept system or that other sources of contamination may be present north or west of the intercept system.

An alternate groundwater-monitoring program is underway at the West Spray Field. Groundwater flow in the uppermost hydrostratigraphic unit is relatively uniform in an east-northeast direction across the unit. Groundwater elevations measured in 1994 were consistent with those reported in previous years. Statistical evaluations of groundwater quality in upgradient versus downgradient wells indicate higher concentrations of strontium, calcium, magnesium, sodium, and chloride in downgradient groundwater. Chloride and TDS concentrations were slightly higher in groundwater from within the West Spray Field than in upgradient groundwater, and radionuclide activities within the spray field occasionally exceeded their mean activities in background groundwater. VOCs were occasionally detected in groundwater from downgradient wells.

The Present Landfill is also undergoing an alternate groundwater-monitoring program. Review of groundwater-elevation data collected for the landfill in 1994 indicates that groundwater flows from landfilled wastes generally east toward the East Landfill Pond. The groundwater-flow direction in surficial materials and weathered bedrock outside the landfill is also generally east, except in the vicinity of the East Landfill Pond, where groundwater flows northeast and southeast toward the pond. Potentiometric heads were generally lower inside the groundwater-intercept system than outside. Within the landfill in 1994, as in 1993, groundwater elevations were higher on the north side than on the south side, suggesting that the groundwater-diversion system performs more effectively along the southwest side of the landfill. Examination of chemical data collected during 1994 indicates that groundwater from the central portion of the landfill contains higher concentrations of some VOCs, radionuclides, metals, and major inorganic ions typical of landfill leachate (such as TDS, chloride, and sulfate) than groundwater from other areas in the vicinity of the landfill. Groundwater in surficial materials southeast of the landfill, adjacent to individual hazardous substance sites (IHSSs) 166.1, 166.2, and 166.3, also contained high concentrations of VOCs, inorganics, and radionuclides (uranium-233,234 and uranium-238) relative to groundwater upgradient of the landfill. Contaminants detected in monitoring wells southeast of the Present Landfill may be due to an inadequately functioning groundwater-intercept system in this area, emplacement of landfill wastes beyond the limit of the intercept system, or impacts associated with other IHSSs adjacent to the landfill. Groundwater quality in downgradient geologic materials appears unaffected by the RCRA unit with respect to VOCs, most metals (except calcium), and other inorganic parameters (excluding TDS and chloride). Trends of groundwater flow and constituent distributions for the three RCRA-regulated units discussed in this report are similar to those presented in previous annual monitoring reports.

Because well-completion details for wells installed prior to 1986 are either incomplete, of questionable accuracy, or do not exist, most of these wells have been abandoned and largely replaced by more recently installed wells.

In late 1986, Phase I of a comprehensive program of site characterizations, remedial investigations (RIs), feasibility studies (FSs), and remedial/corrective actions began at RFETS. These investigations were initiated pursuant to the DOE Comprehensive Environmental Assessment and Response Program (CEARP). A compliance agreement was finalized by DOE representatives and the U.S. Environmental Protection Agency (EPA) on July 31, 1986. CEARP is now known as the Environmental Restoration Program.

The Phase I investigations included:

- Detailed characterization of groundwater flow and quality in the vicinity of the Solar Evaporation Ponds
- Preparation of the groundwater-monitoring and protection section of the RFETS RCRA Part B permit application (Rockwell International, 1986a)
- Preparation of closure plans for each of the three regulated, interim-status RCRA units
- Preparation of a RCRA post-closure care permit application for the RCRA-regulated units undergoing closure.

A total of 71 monitoring wells were installed in 1986 to characterize facility-wide hydrogeology and groundwater quality at RFETS and to satisfy RCRA Subpart F requirements. Twenty-eight of these wells were installed at RCRA units, 19 at the Solar Evaporation Ponds, four at the Present Landfill, and five at the West Spray Field. The work plan for well installation, groundwater sampling, and chemical analysis is presented in the Draft Work Plan, Geological and Hydrological Site Characterization (Rockwell International, 1986b).

In 1987, 67 wells were installed at RFETS to characterize groundwater quality and flow at various Individual Hazardous Substance Sites (IHSSs) and at the three RCRA-regulated units. A total of 20 wells were installed at RCRA-regulated units; four at the Solar Evaporation Ponds and 16 at the Present Landfill. The work plans for well installation, groundwater sampling, and chemical analysis are presented in the CEARP work plans for the installation of generic and site-specific (remedial investigation) monitoring wells (DOE, 1987a; 1987b).

During 1989, 163 wells and piezometers were installed at RFETS. Of these, 58 were installed at the RCRA-regulated units; 37 at the Solar Evaporation Ponds, eight at the West Spray Field, and 13 at the Present Landfill. Additional RCRA monitoring wells were installed in 1992 and 1993; three at the West Spray Field in 1992 and four replacement wells at Solar Evaporation Ponds in 1993. In 1994, a total of 20 new wells were installed; 15 wells and one piezometer were installed at the West Spray Field and four wells were installed at the Present Landfill. None of the 1994 wells were installed for the purpose of RCRA monitoring. Table 1-1 presents the total number of wells installed at RFETS and the number of RCRA wells installed each year since 1986.

Routine quarterly sampling of new monitoring wells at RFETS normally begins as soon as wells are completed and developed. In general, the 1986, 1987, and 1989 RCRA wells were sampled once during the year they were installed and sampled quarterly in subsequent years. Sampling of the RCRA wells installed at the West Spray Field in 1992 began in the fourth quarter. RCRA wells installed at the Solar Evaporation Ponds during 1993 were sampled monthly for four consecutive months and then quarterly with the rest of the existing wells.

Groundwater at RFETS has been analyzed for the EPA Contract Laboratory Program (CLP) Hazardous Substance List (HSL), Target Compound List (TCL), and Target Analyte List (TAL) parameters, and for other inorganic and radionuclide parameters, as shown in Table 1-2. During 1986, groundwater samples were analyzed for HSL VOCs, semi-volatile organic compounds (SVOCs), metals, major ions, and radionuclides. During the first three quarters of 1987, the list of VOCs was reduced to the following nine compounds previously detected in groundwater at RFETS:

- Tetrachloroethene (PCE)
- Trichloroethene (TCE)
- 1,1-dichloroethene (1,1-DCE)
- 1,2-dichloroethane (1,2-DCA)
- 1,2-dichloroethene (1,2-DCE)
- 1,1,1-trichloroethane (1,1,1-TCA)
- 1,1,2-trichloroethane (1,1,2-TCA)
- Carbon tetrachloride (CCl_4)
- Chloroform ($CHCl_3$).

In 1988, the TCL and TAL superseded the HSL. Other changes in the historical analytical program are identified below. An onsite Rockwell International laboratory performed the chemical analyses between 1987 and 1988. Since 1989, offsite laboratories have been used for conducting analyses. The analytical suite for groundwater samples has remained constant since 1991 and a complete list of parameters is provided in Table 1-3. In 1994, the analyte list was augmented by analyzing for both total and dissolved radionuclides and analyzing in the third quarter for a complete Appendix IX to 40 CFR Part 264 suite on a subset of 40 wells, some of which are in the RCRA-regulated units.

Because some wells produce little water during sampling, priorities for collection and analysis have been established. All samples are collected over a 32-hour time period. If the well has not produced sufficient volume during the time period, not all analyses are conducted. In 1989, the priority list for sample collection, from highest to lowest priority, was as follows:

- VOCs
- Plutonium, uranium, and americium

- Nitrate
- Metals
- Other major ions
- Other radionuclides.

During fourth quarter 1989, the priority for sample collection and analysis, from highest to lowest priority was changed as follows:

- VOCs
- Plutonium and uranium
- Major anions
- Nitrate
- Gross alpha and gross beta
- Metals
- Strontium
- Cesium
- Tritium
- Americium
- Cyanide.

During first quarter 1990, the priority for sample collection and analysis, from highest to lowest priority was changed as follows:

- VOCs
- Inorganics
- Nitrate
- Gross alpha, gross beta, and uranium
- Dissolved metals
- Total Metals

- Plutonium and americium
- Tritium
- Cesium, radium, and strontium
- Cyanide
- Orthophosphate.

The priority for sample collection and analysis has not changed since the first quarter of 1990.

Sampling and analysis records are maintained in accordance with sec. 265.94. Annual reports submitted each March since 1988 and quarterly reports submitted each quarter since first quarter 1991, assess groundwater elevations, flow rates, and water-quality analyses.

1.3 Groundwater-Monitoring Approach

The purpose of the RCRA groundwater-monitoring program at RFETS is to determine the impact of regulated units on groundwater quality in the uppermost "aquifer" beneath the units. The state groundwater-monitoring RCRA interim status standards require at least three monitoring wells be installed hydraulically downgradient at the limit of the wastes management area [6 CCR 1007-3, 265.91(a)(2)]. The uppermost "aquifer" at each of the RCRA-regulated units is a component of a site-wide hydrostratigraphic unit, as explained below in Subsection 1.3.1.

1.3.1 Interpretation of the Uppermost Aquifer

The term aquifer is defined in 6 CCR 1007-3, sec. 260.10 as "geologic formation, group of formations or part of a formation capable of yielding a significant amount of groundwater to wells or springs." Based on this definition, much of the shallow saturated material at RFETS does not constitute an aquifer because the yield of water to wells is typically low and broad areas often become dry during fall and early winter months. Nevertheless, because these shallow saturated materials may be capable of transporting contamination that poses a risk to human health or the environment, the interpretation of what constitutes the uppermost "aquifer" at RFETS relies instead on hydrologic and geochemical data that demonstrate hydraulic connection between distinct lithostratigraphic units within the shallow materials. These data indicate that groundwater flow can be described as occurring through at least two discernable hydrostratigraphic units present at RFETS. These units are generally referred to as the upper hydrostratigraphic unit (UHSU) and lower hydrostratigraphic unit (LHSU).

Unconsolidated surficial deposits composed of alluvium, colluvium, and valley-fill alluvium fit the RCRA definition of the uppermost "aquifer" based on their proximity to the groundwater surface and relatively high hydraulic conductivities [$1x10^{-3}$ to $1x10^{-4}$ centimeter/second (cm/sec)]. In addition to these surficial deposits, a weathered zone at the upper surface of the underlying bedrock also typically exhibits relatively high hydraulic conductivity ($1x10^{-4}$ to $1x10^{-6}$ cm/sec), and appears to be in hydraulic connection with the surficial materials, based on geochemical (EG&G, 1995c) and hydrologic (EG&G, 1995b) criteria. These similarly high hydraulic conductivities and the adjacent positioning of surficial deposits against weathered bedrock has contributed to the interpretation that these units collectively comprise the UHSU. Moreover, sandstones with relatively high conductivity subcrop into the weathered bedrock/unconsolidated surficial materials, and also are interpreted to be part of the UHSU (EG&G, 1995b; 1995c).

In contrast to the relatively high hydraulic conductivity of materials in the UHSU, the underlying unweathered bedrock exhibits hydraulic conductivities that range from $1x10^{-7}$ to $1x10^{-8}$ cm/sec. This significantly lower overall hydraulic conductivity strongly limits the flux of groundwater into, and through, the unweathered bedrock. It is this contrast in hydraulic conductivity that defines the upper boundary of the LHSU.

Geochemical evidence also supports this interpretation of the UHSU and LHSU. For example, groundwater in unconsolidated surficial deposits and weathered bedrock (UHSU) generally exhibits calcium-bicarbonate chemistry. In contrast, groundwater in the unweathered bedrock

(LHSU) ranges from sodium-sulfate to sodium/chloride-sulfate to sodium-bicarbonate/chloride to sodium-bicarbonate chemistry (EG&G, 1995c). The similar chemical characteristics of groundwater in surficial deposits and weathered bedrock suggests that these units are hydraulically connected. The distinct chemical characteristics of groundwater in the unweathered bedrock indicate hydraulic separation from the overlying deposits.

To summarize, the UHSU includes the saturated portions of several distinct lithostratigraphic units: Quaternary alluvium, colluvium, valley-fill alluvium, weathered bedrock of the Arapahoe and Laramie Formations, and sandstones within the Arapahoe and Laramie Formations that are in hydraulic connection with overlying unconsolidated deposits or the ground surface (EG&G, 1991a). The LHSU is composed of saturated unweathered bedrock. Considering this information, the UHSU is interpreted as the uppermost "aquifer" at RFETS.

1.3.2 Conceptual Model for Groundwater Flow

In general, the UHSU ranges in thickness from 15 feet (ft) to more than 100 ft and is the most laterally extensive water-bearing unit at RFETS. The UHSU thickness is dependent on the thickness of surficial deposits and weathered bedrock. The weathered bedrock is commonly less than 15-ft thick but may extend to depths of 60 ft below the top of bedrock (EG&G, 1993a). Unconfined groundwater flows through this unit (EG&G, 1991a) and water levels rise and fall regularly in direct response to recharge and groundwater discharge.

UHSU recharge results from infiltration of precipitation and, to a lesser extent, from stream, ditch, and pond seepage. The amount of recharge resulting from leakage of pipes, drains, and sumps is currently under investigation and will be presented in a report entitled "Sitewide Water Budget" to be released in early 1996. Discharge occurs into streams, ditches or ponds, and through surface seeps and evapotranspiration. Seasonal response in water levels during periods of increased or decreased precipitation is apparent. The water table rises to a maximum elevation during the wet season (April through June) and generally declines during the remainder of the year. Seasonal fluctuations are most pronounced in the central portion of RFETS, where large areas of surficial deposits become unsaturated during dry season (EG&G, 1993c). Unsaturated areas also occur where engineered structures have been installed to control groundwater flow at the Solar Evaporation Ponds and 881 Hillside (DOE, 1992a; 1993a).

Potentiometric-surface maps were used to determine the direction and relative magnitude of flow (EG&G, 1993a). Groundwater in the UHSU generally flows from west to east across RFETS, following the regional topography. The regional topography is incised by several stream drainages in the middle portion of RFETS. This valley incision contributes to increased relief in the form of east-west trending ridges and east-draining valleys. The paleotopographic surface of the underlying bedrock has also been incised by these streams. Groundwater in the UHSU flows to the east along the tops of these ridges, then generally north and south into the incised valleys, and continues to flow generally east after reaching the valley axes. The direction of groundwater flow is locally controlled by depressions and small channels in the bedrock surface that act as conduits for flow (EG&G, 1993a). Groundwater flow is more rapid in surficial deposits than in weathered bedrock, due to the higher relative hydraulic conductivities of these deposits.

1.4 Methods for Data Analysis

The primary objectives of data analysis performed for this report are to:

- Verify the presence of hazardous waste or hazardous-waste constituents in groundwater at RCRA-regulated units
- Assess the rate and extent of migration of the hazardous waste or hazardous-waste constituents in groundwater
- Evaluate the concentrations of hazardous waste or hazardous-waste constituents in groundwater [sec. 265.93(a)].

This report contains potentiometric-surface maps, analyte-distribution maps, concentration-isopleth maps, and the results of laboratory analyses and statistical comparisons. The maps and tables summarize the spatial and temporal variability of groundwater elevations and contaminant concentrations to the degree allowed by the existing database. The 1994 data were reviewed to determine whether significant changes in flow direction, flow velocity, contaminant concentrations, or contaminant distributions have occurred since 1993. Conservative estimates of contaminant migration rates were made using equations for non-reactive, advective transport in groundwater. The following sections describe the methods of these analyses. Results are presented for each of the RCRA units in Sections 3.3 and 3.4; 4.3 and 4.4; and 5.3 and 5.4.

1.4.1 Potentiometric-Surface Maps

Groundwater potentiometric-surface maps were constructed for all four quarters of 1994 for the UHSU at each RCRA-regulated unit. Where possible, potentiometric-surface maps were generated for both UHSU surficial and bedrock materials. These were used to determine hydraulic gradients (direction and magnitude) and to calculate groundwater flow velocities and transport rates for non-reactive chemicals. For map construction, it was assumed that well-construction details, borehole logs, and depth-to-water measurements were accurate. When the measured depth to water was greater than the reported depth to the bottom of the well screen, the well was assumed to be dry. Because vertical hydraulic gradients may exist, potentiometric data from wells screened across the water table (wells screened in surficial deposits) were used whenever possible.

Maps constructed for the UHSU for this report were based primarily on data from wells screened in surficial deposits. If these wells were dry and potentiometric-surface data were available from a nearby well screened in weathered bedrock of the UHSU, data from the bedrock well were used to estimate the potentiometric-surface elevation.

1.4.2 Vertical Hydraulic Gradients

Previous RCRA groundwater-monitoring reports presented calculated values for vertical hydraulic gradients. These values are determined using water levels measured concurrently in wells located close to each other but screened across different depths. Equation 1-1 used to calculate the vertical hydraulic gradient is:

$$\frac{h_1 - h_2}{dl} \tag{1-1}$$

where

h_1 = the elevation of water in the upper well

h_2 = the elevation of water in the lower well

and

dl = the vertical distance between the centers of the screened intervals.

Using the elevation at the center of the well screens to calculate dl provides an estimate of the true vertical distance between the points of elevation measurement. However, no corrections are made to dl when the measured depth to water is below the top of the well screen; therefore, the resulting vertical gradients determined using these estimates of dl are estimated values. These results provide qualitative information to describe the direction of the hydraulic gradient but not the true magnitude of the gradient. Vertical hydraulic gradients have been calculated for well pairs at the three RCRA-regulated units.

1.4.3 Average Linear Flow Velocities

Average linear groundwater-flow velocities (Darcy velocities) were calculated at all RCRA-regulated units. Equation 1-2 was used to calculate the Darcy velocity (v):

$$v = \frac{K}{n} (dh/dl) \qquad (1\text{-}2)$$

where

K = hydraulic conductivity

n = effective porosity

dh/dl = hydraulic gradient.

The values for hydraulic gradients, hydraulic conductivities, and effective porosities used to calculate the Darcy velocities are presented in Sections 3, 4, and 5. Wherever possible, Darcy velocities were calculated for groundwater flow across areas both within the unit and downgradient of the unit. Groundwater-flow velocities can be used as estimates of the maximum migration rates for conservative (non-reactive) groundwater constituents. Because they do not consider the effects of dispersion and chemical reactions (e.g., volatilization, biodegradation, and adsorption) on the concentration of constituents along a flow path Darcy velocities approximate the maximum rate of migration for dissolved constituents in the groundwater. Attenuated, volatile, biodegradable, or redox-sensitive species likely exhibit migration rates slower than the average linear velocity of groundwater flow.

1.4.4 Analysis of Water-Quality Data

Chemical-concentration isopleth maps were constructed for selected analytes that best illustrate the extent of contamination associated with each RCRA unit, and for which sufficient data exist to construct reasonably accurate concentration contours. Because second quarter analytical data were most complete, isopleth maps constructed using these data proved most representative of chemical distributions in groundwater. Only data for wells in the uppermost "aquifer" (i.e., UHSU) were considered.

Analyte-distribution maps were plotted for radionuclides and VOCs. These present all detections of radionuclides and VOCs in the UHSU during 1994 for each of the RCRA-regulated units.

VOC and radionuclide data for the first three quarters are presented in this report. Results reported below detection limit (BDL), including radionuclide results qualified by the laboratory as below detection limit, were shown as non-detects with no values given. In cases where the radionuclide result has no laboratory qualifier, the numerical result (positive or negative) is reported on the map. Reported concentrations exceeding the value of background (defined as the background mean plus two standard deviations) for the parameters listed on Table 1-4 were highlighted in red. Where possible, analyte-distribution maps were constructed for both UHSU surficial and bedrock materials.

1.4.5 Graphical Evaluations of Chemical Data

Chemical data were evaluated using several graphical techniques, including trend plots and control charts. The generation of these graphs follows a basic decision tree. An explanation of the decision tree and the subsequent statistical techniques used to generate these graphs is presented in Appendix F.

As discussed in Appendix F, trends are identified by a least-squares linear fit to the data. If the slope is significantly different from 0 (as determined by two-tailed Student's t-test with 1% significance), then the fitted line is drawn. If a significant trend is identified, control charting is not attempted.

Cumulative-Sum (CUSUM) control charts were constructed for intrawell comparisons of analytes in upgradient and downgradient wells at each RCRA-regulated unit. Control charts are used to monitor inherent statistical variations of the analytical data collected from individual wells, and to provide a visual tool for detecting both trends and abrupt changes in analyte concentrations. The control-chart algorithm is essentially that described in Evaluation of Control Chart Methodologies for RCRA Waste Sites (Starks and Flatman, 1989). It is a combined Shewhart-CUSUM methodology, with a learning period of 12 samples, followed by updating of the estimated sample mean and standard deviation 4, 8, 12, 20, and 32 samples beyond the learning period. The Shewhart and CUSUM limits are also updated (Starks and Flatman, 1989). A control chart has the following characteristics in addition to those on a basic chart:

- Three horizontal lines, which begin dashed and then change to solid, indicate the control limits of the control chart. The top line indicates the upper control limit, the center line indicates the running mean of the measurements, and the bottom line indicates the lower control limit.

- Unfilled circles mark out-of-control (OOC) measurements.

- Filled circles represent outliers. Outliers are shown, but are not used in computations. Outliers are detected using the Hawkins one-outlier test for the normal distribution at the 5% significance level, as given in Mandansky (1988).

- The lower half of the screen shows a CUSUM display. It plots the absolute cumulative difference between the data and a small deviation from the running mean. The CUSUM helps define localized trends.

Trend plots or control charts were prepared for selected analytes in upgradient or downgradient wells at each of the three RCRA-regulated units. These graphs are presented in Appendix G. Analytes of interest were selected primarily on the basis of their association with historical waste-management practices within each unit. These selected analytes also had to meet the minimum statistical requirements for generating trend plots and control charts.

1.4.6 Statistical Evaluations of Chemical Data

At each RCRA-regulated unit, groundwater-quality data from monitoring wells located hydraulically upgradient of the unit were compared to groundwater-quality data from monitoring wells located downgradient of the unit. This comparison provides a qualitative and quantitative assessment of potential contaminants being released into the uppermost "aquifer" from the regulated unit. Each unit has at least one upgradient and three downgradient monitoring wells for use in statistical comparisons. Those used for the comparisons are discussed in the section for each respective unit.

Statistical methods used to compare upgradient to downgradient groundwater quality were based on procedures in the Interim Final Guidance for Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities (EPA, 1989) and the Draft Addendum to Interim Final Guidance, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities (EPA, 1992a). Figure 1-1 presents a flowchart for the procedure used to select appropriate statistical methods. The procedure was used for each analyte at each RCRA-regulated unit.

Chemical concentrations from upgradient and downgradient wells were compared using groundwater data for the UHSU. Sufficient data were available for comparing upgradient and downgradient wells screened in weathered bedrock of the UHSU at the Solar Evaporation Ponds and Present Landfill but not for the West Spray Field. Sufficient data were available for comparing concentrations in groundwater from upgradient and downgradient wells in surficial materials of the UHSU at the West Spray Field, but data were not available for such comparisons at the Solar Evaporation Ponds or the Present Landfill.

The proportion of detections and number of results from each well were determined for each analyte within each RCRA-regulated unit. Only wells with two or more results for an analyte were included in the statistical evaluation, and only analytes that were detected in more than 50% of the samples from the unit were included in the statistical evaluation. If the percentage of quantified results for a particular analyte was less than 50%, the detections of that analyte at downgradient wells were reported. If the proportion of detections for a particular analyte exceeded 50%, an analysis of variance (ANOVA) procedure was performed. Wells with at least two results for a particular analyte were included in the ANOVA procedure. Consistent with

EPA guidance (EPA, 1989), non-detects in the data were replaced with one-half the detection limit prior to performing the parametric ANOVA.

ANOVA is the name given to a wide variety of statistical procedures that compare the means of different groups of observations to determine if significant differences exist between them. Because of its flexibility and power, ANOVA is the preferred method of statistical analysis when groundwater monitoring is based on comparison of background- and compliance-well data (EPA, 1989). The null hypothesis for the parametric ANOVA assumes that the mean analyte concentrations from all wells are equal.

Hypothesis tests with the parametric ANOVA assume that the errors (residuals) are normally distributed with equal variance. For analytes having greater than 85% detections, residuals were tested for normality using the Shapiro-Wilk test (EPA, 1992a) and for homogeneity of variance using Levene's test (EPA, 1992a). If the residuals of the original data did not meet both assumptions, data were transformed using natural logarithms. The Shapiro-Wilk and Levene tests were then performed on the residuals of the log-transformed data.

Analytes having 50 to 85% detections were not tested for normality or equality of variance. These analytes were tested using the nonparametric ANOVA Kruskal-Wallis test. Analytes that were neither normally nor lognormally distributed, as indicated by the Shapiro-Wilk and Levene tests, were also evaluated using the nonparametric ANOVA Kruskal-Wallis test. The Kruskal-Wallis test uses the ranks of the data to determine if significant differences exist between group means. The null hypothesis for the Kruskal-Wallis test assumes that the mean concentrations for the wells are equal.

All ANOVA tests (parametric and nonparametric) were conducted at the 5% significance level (Type I error rate). The observed significance level (p-value) for a statistical test is the probability that differences in means as large as those observed could be attributed to random chance. Therefore, a significance level less than or equal to 5% strongly indicates that differences in the means between analyzed wells are not random.

For analytes with significant differences in mean concentrations, as indicated by a p-value of less than or equal to 0.05, multiple-comparison techniques were used to compare the mean concentrations at compliance wells with the mean concentrations at upgradient wells. These comparisons were used to determine which wells had detections significantly above mean-upgradient concentrations. This was accomplished by calculation of the Bonferroni t-statistic for analytes that were normally or lognormally distributed (EPA, 1989). Multiple comparisons for analytes tested using the nonparametric Kruskal-Wallis test were conducted by comparing differences in mean ranks of compliance and upgradient wells to calculated critical values following EPA guidance (EPA, 1989). Wells that had detections significantly elevated above the mean upgradient concentrations for a particular analyte, as indicated by the multiple-comparison tests, are reported in Sections 3, 4, and 5. Results of all statistical comparisons are included in Appendix C.

2.0 QUALITY OF ANALYTICAL DATA

This section summarizes the analysis of data quality for the 1994 RCRA groundwater-monitoring program. The RCRA groundwater-monitoring program was conducted in accordance with the Environmental Restoration Program Quality Assurance/Quality Control Plan (Rockwell International, 1989b) as amended by the Quality Assurance Project Plan (QAPjP) for Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) RI/FS and RCRA Facility Investigation/Corrective Measure Study (RFI/CMS) activities (EG&G, 1991b). The collection, storage, and shipping of water samples was conducted in accordance with the RFETS Environmental Management Division (EMD) Operating Procedures Manual (EG&G, 1991c).

Analytical data for the groundwater-monitoring program were generated using EPA and other well-established analytical methods identified in the General Radiochemistry and Routine Analytical Services Procedures (GRRASP) (EG&G, 1991d). Most laboratory analyses for TAL metals and TCL organic compounds were performed by EPA CLP methods. Methods for non-CLP analytes, the major ions and radionuclides, were based on EPA and other published references.

2.1 Data Validation

Analytical data for RFETS are validated by an independent, third-party contractor following EPA functional guidelines for data validation (EPA, 1988a; 1988b) to validate the results of metal and organic-compound analyses conducted using CLP methods. Non-CLP analytical data are validated using data-validation guidelines developed for and approved by the RFETS EMD, because such guidelines have not been published by EPA (EG&G, 1991d). The 1994 RCRA groundwater-monitoring data are validated at EPA Level IV or the equivalent for non-CLP analyses. EPA Level IV refers to the level of quality control (samples and documentation) required in CLP. Validated data are classified by EMD in one of three ways: V = valid and usable without qualification; A = acceptable for use with qualification (also JA); and R = rejected or unacceptable for use. Rejected data are not used in the statistical computations, data analyses, or in the data-quality assessment (with the exception of assessing analytical completeness). Data classified as V, A, or JA are considered of equal utility, and are used in the data-quality assessment.

Not all data from 1994 have been validated. The status of data validation for the 1994 groundwater samples is summarized in Table 2-1. Of the total number of records (analytical results) in the data set, approximately 76% have been validated. The percentage validated varies by analyte group. Water quality data had the lowest percentage of validated results with 48% completion. For volatile organic compounds, 58% of the data were validated. Approximately 1% of the validated records have been rejected. The percentage of data rejected also varies by analyte group with results for radionuclides having the highest percentage of rejected results (2.8%).

2.2 Data-Quality Assessment

In this section, the quality of the analytical data is assessed in terms of five data-quality indicators: precision, accuracy, representativeness, completeness, and comparability (PARCC) parameters (EPA, 1992b). This section summarizes the types of data available to assess the PARCC parameters, presents the results of data-quality evaluations for each analyte, and evaluates the overall quality of the groundwater-monitoring data for 1994.

Precision is a measure of the reproducibility of analytical results. Precision is expressed quantitatively by the relative percent difference (RPD) between results from duplicate field samples. The RPD is defined and comparison criteria for precision are specified in Section 2.2.1.

Representativeness is a qualitative measure of how data meet the goal of representing the media sampled. The only aspect of representativeness addressed in this section is the possible introduction of contamination into environmental samples during sample collection and handling. This aspect is evaluated from equipment-rinsate samples. An evaluation of representativeness is presented in Section 2.2.2.

Completeness is a measure of how many usable data were derived from the sampling program. For analytical data, completeness is expressed by a statement of the percent of the data accepted during data validation (Section 2.1). The completeness of the sampling program is determined by accounting for the samples collected and identifying the number of samples missing from the data records as presented in Section 2.2.3.

Comparability expresses the extent to which data collected and analyzed using different methods can be considered to be equivalent. Comparability is assessed primarily by examining the precision and accuracy of data and determining whether variations in those parameters occurred over time.

2.2.1 Precision

Precision is assessed using the analytical results from field duplicate samples. Precision based on field duplicates is a measure of the reproducibility of the entire sampling and analytical process. Quantitative estimates of precision are made by calculating the RPD as defined by Equation 2-1.

$$RPD = \frac{(S - D)}{(S + D)/2} * 100 \qquad (2\text{-}1)$$

where

S = result for real sample

D = result for duplicate sample

Data rejected during data validation were eliminated from the data set prior to calculating RPD values. Data that had a validation code of Y and Z (Y = results in validation process, and Z = validation was not requested or performed) were included and considered usable. The RPD was not calculated for duplicate samples for which the analytical result of either the sample or duplicate was qualified as non-detectable (laboratory qualifiers U, UC, UJ, UN, UW) or for results of metal analyses with concentrations less than the contract-required detection limit (laboratory qualifier B). These types of results have inherently poor reproducibility or precision. The acceptable limit on the RPD for duplicate water samples is specified as 20% in the QAPjP (EG&G, 1991b) and in GRRASP (EG&G, 1991d). The complete results of the RPD calculations are presented in Appendix D.

2.2.1.1 Dissolved and Total Metals

In general, the RPD values calculated for duplicate analyses of dissolved and total metals are less than 20%. Precision is slightly better for the dissolved metals, with RPD values greater than 20% occurring less frequently and for a smaller list of metals than those for total-metal analyses. The metals having RPD values greater than 20% in both total and dissolved samples are silicon, aluminum, manganese, potassium, and zinc. In general, the analyses of metals with relatively high concentrations in water (dissolved barium, calcium, magnesium, silicon, and sodium) have the highest precision.

2.2.1.2 Dissolved and Total Radionuclides

The precision of radionuclide analyses, as measured by the RPDs for duplicate samples, is generally poor. RPD values for all of the radionuclides analyzed are routinely above 20% and, in some cases, higher than 100%. The duplicate samples having the highest radionuclide activities show the highest precision (low RPD values). Gross alpha and gross beta have higher measured activities than the other radionuclides and these measurements have the best precision overall.

The poor precision of radionuclide analyses of groundwater samples was noted previously (EG&G, 1993b; 1993c). The activities measured in groundwater samples are typically very low and commonly not detectable. The laboratories always report a numerical value for radionuclide activity and generally do not report a detection limit. Some of the activities reported are less than or equal to zero. In some cases, the laboratories qualify radionuclide results with a "U" qualifier. For measurements of activities near the detection limits, the counting errors are high, and the precision of results are low.

2.2.1.3 Volatile Organic Compounds

Because of the infrequent detection of VOCs in the duplicate samples, their RPD values were not included in Appendix D. For those VOCs present at detectable levels in duplicates, the precision of the analysis appears to depend on the concentration of the compound in the samples. Higher concentrations result in lower RPD values and higher precision for the analysis. Relatively high RPD values were calculated for methylene chloride (133%, and 111%) using results qualified as "estimated values" ("J" lab qualifier indicating value near the detection limit). No other VOCs were detected in duplicate samples.

2.2.1.4 Anions and Water-Quality Parameters

The precision for analyses of major anions and other water-quality parameters was generally good. Average RPD values were within 20% for all these analytes, except total suspended solids (TSS). The relatively poor precision for TSS may be due to the inhomogeneity of duplicate samples rather than poor analytical precision. RPD values of 200% indicate samples that do not have matching duplicate results or results which are below the detection limit (see Appendix D).

2.2.2 Representativeness

The representativeness of samples can be assessed using analyses of field blanks, trip blanks, and equipment-rinsate samples. If analyses of these sample types indicate the presence of potential contaminants on a consistent basis, the results of real-sample analyses may not be representative of the actual concentration of those parameters in groundwater. Equipment-rinsate samples are routinely collected and analyzed as part of the sitewide groundwater-monitoring program (EG&G, 1991b). The analytical results for field blanks and trip blanks were not included in the RFEDS (Rocky Flats Environmental Database System) database and thus are not discussed below. The analytical results for equipment-rinsate samples were included in the RCRA database. These results are discussed in the following paragraph.

The analytes detected in equipment-rinsate samples during the 1994 groundwater-monitoring program are listed in Table 2-2. Two analytes, ammonia and bicarbonate, were detected in more than 30% of the rinsate samples. The mean concentrations of both of these analytes are lower than their average concentrations in groundwater samples collected from background locations. Their presence in rinsate samples does not occur with the frequency or at the concentration levels that will affect the representativeness of groundwater samples. All analytes listed in Table 2-2, with the exception of zinc, ammonia, and orthophosphate, are major-ion constituents of natural waters and may originate from the distilled water used to rinse sampling equipment.

Four organic compounds (4-methyl-2-pentanone, carbon tetrachloride, methylene chloride, and TCE) were infrequently (less than 10%) detected in rinsate samples. Toluene was detected in approximately 20% of rinsate samples. The presence of these compounds in rinsate samples are likely the result of laboratory artifacts and do not occur with the frequency or at a concentration level that will affect the representativeness of groundwater samples.

2.2.3 Completeness

The completeness of sampling and analysis activities in support of the RCRA groundwater-monitoring program is summarized in Table 2-3. The table provides the status of each well at each RCRA-regulated unit in terms of the availability of data. For each quarter of 1994, the types of data available from each well location are shown. If data were not available on December 16, 1994, "No Data" is reported on the table. Analytical data from the fourth quarter sampling were not available for incorporation in this report. The acceptable limit (minimum) for completeness of a data set is 90% (EG&G, 1991b). The current completeness of the analysis activities is less than 90%. The completeness of sampling and analytical data will be re-evaluated in the Addendum to the 1994 Annual RCRA Groundwater Monitoring Report when all laboratory analyses are received.

In general, for the first three quarters, the majority of the requested analytical data are available. In more than 90% of cases when sample results are not available from a well, the well was dry and could not be sampled.

2.2.4 Comparability

Groundwater samples collected using the EPA-approved methods detailed in the EMD Operating Procedures Manual are considered comparable. As required by the GRRASP (EG&G, 1991d), identical analytical methods are used for each groundwater analysis so that results reported for each group of analytes are also comparable.

3.0 GROUNDWATER MONITORING AT THE SOLAR EVAPORATION PONDS

The Solar Evaporation Ponds are situated on the northeast side of the Protected Area in the central portion of RFETS (Plate 1-1). The Solar Evaporation Ponds Waste Management Unit (also referred to as IHSS 101) includes five surface impoundments: Ponds 207-A, 207-B North, 207-B Center, 207-B South, and 207-C. The major features associated with the unit are the five existing ponds, the Original Pond (no longer present), and the Interceptor Trench System (Figure 3-1).

A detailed description of the purpose, construction, and operation of the ponds and Interceptor Trench System can be found in the closure plan for the Solar Evaporation Ponds (DOE, 1988), the Final Phase I RFI/RI Work Plan for the Solar Evaporation Ponds (DOE, 1992a), and the Sampling and Analysis of Solar Pond Water and Sludge—Final Report (Weston, 1991). The following operational history of the Solar Evaporation Ponds was taken in part from the Groundwater Assessment Plan (GWAP) (DOE, 1992b).

The Solar Evaporation Ponds were originally built to store and treat low-level radioactive process wastes containing high concentrations of nitrates. At various times during their use (1953 to 1986), these ponds received wastes such as sanitary sewage sludge, lithium metal, sodium nitrate, ferric chloride, lithium chloride, sulfuric acid, ammonium persulfates, hydrochloric acid, nitric acid, hexavalent chromium, and cyanide solutions (Rockwell International, 1988). Solvents and other organics were not routinely discharged to the ponds; however, low concentrations of solvents may have been present as secondary constituents in liquid wastes.

The Original Pond was built in 1953 and used continuously until 1956, when its regular use was discontinued. Pond 207-A began service in August 1956. The liquids previously stored in Pond 207-A contained high concentrations of nitrates, aluminum, chromium, copper, iron, potassium, sodium, nickel, tin, plutonium, americium, uranium, and tritium. Pond 207-A liquids were generally more contaminated than Pond 207-C liquids, except for plutonium and americium. They were also higher in concentrations of nitrate, metals, and radionuclides than Ponds 207-B North and Center. Pond 207-A liquids had particularly high concentrations of chromium and nickel, and an alkaline pH ranging from 8.3 to 11.0. Analyses of Pond 207-A sludges showed high concentrations of nitrates, metals, and radionuclides, similar to the pond liquids. In addition to the high concentrations of these analytes found in the liquid, high concentrations of calcium and magnesium were detected in the Pond 207-A sludges (DOE, 1988). Pond 207-A is nearly dry, and the sludge has been removed. The pond currently contains only a small volume of intercepted precipitation.

Service of Ponds 207-B North, 207-B Center, and 207-B South began in June 1960. These ponds contained process wastes until 1977, when the ponds were cleaned and the linings replaced. Between 1977 and 1994, these ponds have held treated sanitary effluent, treated water from the reverse-osmosis facility, backwash brine from the reverse-osmosis facility, and groundwater collected and pumped back from the Interceptor Trench System. Ponds 207-B North and 207-B Center generally had low concentrations of nitrates, metals, and radionuclides. Analysis of Pond 207-B liquids showed metal concentrations at or below drinking-water standards during this period (DOE, 1988). In 1994, Ponds 207-B North and 207-B Center were both cleaned out in May and June. Pond 207-B South was cleaned out in September 1994. All 207-B ponds are nearly dry, containing only small volumes of intercepted precipitation.

Pond 207-C was constructed in 1970 to provide additional storage capacity. This capacity enabled the transfer and storage of liquids from the other ponds while they were being repaired. Concentrations of contaminants in Pond 207-C liquids are approximately two orders of magnitude higher than in Pond 207-B North and 207-B Center for nitrate, metals, and radionuclides. The liquid in Pond 207-C is generally less contaminated than liquids from Pond 207-A, except for plutonium and americium, which have concentrations approximately 10 times higher in Pond 207-C. During 1994, Pond 207-C was used to store and treat process waste water and sludge. Pond 207-C is scheduled to be cleaned out in early 1995.

In the early 1970s, nitrite contamination was detected in North Walnut Creek (Figure 3-1). A series of trenches and sumps were installed between 1971 and 1974 on the hillside north of the Solar Evaporation Ponds in response to this detection. This system was designed to prevent natural groundwater seepage and pond leakage from entering North Walnut Creek. The trenches and sumps collected pond seepage and groundwater and were in operation until the 1980s when they were replaced by the more extensive Interceptor Trench System.

Routine placement of process wastes into the Solar Evaporation Ponds ceased in 1986. The Solar Evaporation Ponds area is being closed through the Interim Measure/Interim Remedial Action (IM/IRA) process in accordance with the IAG and applicable Colorado hazardous-waste regulations. Post-closure inspection, maintenance, and monitoring of the Solar Evaporation Ponds will be conducted in compliance with 6 CCR 1007-3, Part 265, Subpart G.

3.1 Summary of Previous Investigations

This summary of previous investigations addresses the assessment groundwater-monitoring program and the previously observed nature and extent of groundwater contamination.

3.1.1 Assessment Groundwater-Monitoring Program

The Solar Evaporation Ponds area has a groundwater-quality monitoring program in accordance with sec. 265.93(d). It has been established in the RCRA permit that analyses be performed under sec. 265.93(c)(2) to confirm the impact of the water quality downgradient from the ponds. The GWAP (DOE, 1992b) summarizes the history of previous site-specific hydrogeological investigations, the initial groundwater monitoring-well network and subsequent well-installation programs, sampling and analysis procedures, and methods of evaluation used to assess the groundwater-monitoring program at the Solar Evaporation Ponds area. The GWAP also includes procedures and techniques for sample collection, preservation, and shipping, and laboratory analysis procedures and chain-of-custody control. Changes to the groundwater-quality assessment program for the Solar Evaporation Ponds were described in the 1991, 1992, and 1993 Annual RCRA Groundwater Monitoring reports (DOE, 1992c; 1993; and 1994a).

3.1.2 Previous Nature and Extent of Groundwater Contamination

Previous hydrogeologic investigations of the Solar Evaporation Ponds have shown that the leakage from the ponds has adversely impacted groundwater migrating through alluvium to the north, northeast, and southeast into the Walnut Creek drainages. North and east of the Solar Evaporation Ponds, downgradient contaminants include total dissolved solids (TDS), nitrate/nitrite, sulfate, sodium, radionuclides (including uranium and tritium), VOCs, dissolved metals, TSS, and inorganics. These contaminants, with the exception of TSS, were also found at elevated levels upgradient of the Solar Evaporation Ponds. East and north of the Solar Evaporation Ponds and Interceptor Trench System, concentrations of nitrate/nitrite, radionuclides, organics, and other analytes in downgradient alluvial and bedrock wells suggest that the containment system may not completely prevent contaminant migration north of the ponds (DOE, 1994a). Groundwater in the unconfined bedrock also appears to have been impacted by the ponds. Subcropping sandstones occur in the area; however, the extent of these sandstones and the groundwater quality within them are not fully characterized at this time (DOE, 1990a; 1991a; and 1992b).

Statistical comparisons of groundwater quality upgradient of the Solar Evaporation Ponds to groundwater quality downgradient and at the compliance boundary of the unit have been used to show that the UHSU has been affected by leakage from the Solar Evaporation Ponds (DOE, 1993a; 1994a). In 1992 and 1993, VOCs were detected in groundwater from monitoring wells completed in UHSU surficial materials and weathered bedrock. Higher concentrations of VOCs were typically found in groundwater from wells immediately adjacent to Pond 207-C. Nitrate/nitrite, and to a lesser extent sulfate and fluoride, were frequently present at high concentrations in groundwater from both surficial materials and weathered bedrock. Concentrations of these analytes were typically highest in monitoring wells located north of the ponds. Activities of gross alpha, gross beta, tritium, uranium-235, uranium-233,234, radium-226, radium-228, and uranium-238 were typically highest in UHSU wells adjacent to the ponds and in groundwater along North Walnut Creek surficial materials.

In 1993, the distribution of contaminants was similar to that observed in 1992. Distributions of inorganic constituents were most similar to the 1992 distributions, with the highest concentrations typically in wells immediately north and east of the ponds. VOCs were detected in 1993, as in 1992, in both surficial material and weathered bedrock. The suite of VOCs detected was larger in 1993 and includes 1,1,1-trichloroethane, 1,1-dichloroethane, 1,1-dichloroethene, 1,2-dichloroethene, cis-1,2-dichloroethene, tetrachloroethene, trichloroethene, 4-methyl-2-pentanone, 2-hexanone, vinyl chloride, methylene chloride, carbon tetrachloride, chloroform, carbon disulfide, acetone, and benzene. VOCs were detected both upgradient and downgradient of the Solar Evaporation Ponds. Radionuclides were typically highest in wells adjacent to the ponds and in groundwater along North Walnut Creek surficial materials as observed in 1992. However, the activities observed in the North Walnut Creek surficial material were typically one to two orders of magnitude lower than that observed near the ponds.

3.2 Current Groundwater-Monitoring Program for the Solar Evaporation Ponds

The uppermost "aquifer" at the Solar Evaporation Ponds is equivalent to the UHSU, which is composed of surficial deposits and weathered bedrock, as well as sandstones in hydraulic connection with the surficial deposits. The surficial deposits include Rocky Flats alluvium, colluvium, and valley-fill alluvium. Wells screened in underlying bedrock were assigned to the UHSU or LHSU based on the major-ion composition, hydraulic conductivity measurements (when available), and lithologic information on borehole logs. Confined hydrostratigraphic units consisting of unweathered claystone and sandstone have not been considered part of the uppermost "aquifer" and are included in the LHSU.

The 71 active groundwater-monitoring wells located at or near the Solar Evaporation Ponds area are listed on Table 3-1, and their locations are shown on Figure 3-1. Fifty-eight of these wells are RCRA-regulatory wells being sampled quarterly as part of the RCRA groundwater-quality assessment program for the Solar Evaporation Ponds. Of the 71 active wells in the vicinity of the Solar Evaporation Ponds, 61 are screened in the UHSU (34 wells screened in surficial materials and 27 wells screened in bedrock) and 10 wells are screened in the LHSU (see Table 3-1). No new monitoring wells were installed at the Solar Evaporation Ponds area during 1994.

Groundwater elevations are measured at least quarterly and groundwater samples are collected quarterly. The samples are analyzed for the parameters listed in Table 1-3. The sampling and analysis records are maintained in compliance with sec. 265.94(b).

3.3 Groundwater Flow

Recent interpretations of groundwater flow in the vicinity of the Solar Evaporation Ponds (EG&G, 1993a and DOE, 1993a; 1994a) suggest that the topography of the underlying bedrock surface influences the saturated thickness and the flow directions within surficial materials. The top of the bedrock surface is relatively flat to gently east-sloping immediately below the Solar Evaporation Ponds. East of the ponds, available data indicate that the bedrock surface forms an east-trending ridge (EG&G, 1991a). North of the ponds, the bedrock surface slopes northward toward North Walnut Creek. The thickness of saturated surficial materials is highly variable and appears controlled primarily by the underlying bedrock surface topography. The maximum thickness of saturated surficial material typically occurs at the same locations as localized topographic depressions in the bedrock surface or in the immediate vicinity of the ponds themselves. Thicker sections of saturated surficial material (relative to other areas near the Solar Evaporation Ponds) also occur in the vicinity of leaking water-supply lines and drainage culverts.

The groundwater-flow direction within weathered bedrock (UHSU) underlying the Solar Evaporation Ponds has not been fully characterized. Assessment of the flow direction will continue as part of the Phase II RFI/RI Work Plan for Operable Unit No. 4—Solar Evaporation Ponds. At present, the general flow direction in weathered bedrock is assumed to be consistent with the predominantly eastward flow observed on a regional scale by Robson et al. (1981).

3.3.1 Potentiometric Surfaces

Groundwater potentiometric-head data calculated from depth-to-water measurements are presented in Appendix A. In general, potentiometric heads at the Solar Evaporation Ponds in 1994 were very similar to the potentiometric heads in 1992 and 1993. Significant variations in heads from 1993 to 1994 occur infrequently, and are limited to UHSU-bedrock wells B208689 and B210389, located north of the Solar Evaporation Ponds, in the Walnut Creek drainage. Well B208689 indicated water levels ranging from approximately 1 to 5 ft lower than those measured in similar quarters of 1993. Nearby, well B210389, indicated water levels approximately 4 to 7 ft higher than those recorded for the same quarter in 1993.

During 1994, potentiometric heads within any single well generally fluctuated approximately 2 to 6 ft, although in a few of the wells the potentiometric-surface elevation fluctuated as much as 9 ft. Larger fluctuations noted for wells 2386 and 3987 were likely due to inaccurate depth-to-water measurements during the second-quarter water-level measurement.

Potentiometric-surface maps were constructed for both surficial materials and bedrock of the UHSU for each of the four quarters of 1994. These maps are presented in Figures 3-2 to 3-9. Potentiometric-surface maps for surficial materials in the Solar Evaporation Ponds area (Figures 3-2 to 3-5) indicate that groundwater flows in two directions from the southwest corner of Pond 207-A: north and east-southeast. Surficial deposits are unsaturated across a large area immediately beneath and downgradient of the Interceptor Trench System and along the axis of a ridge trending east-northeast from the ponds area. Unsaturated areas also occur around individual dry wells, but their size and shape are not well defined and vary seasonally. Water is typically present in well B209089, which is located next to the Interceptor Trench System, and may be surrounded by unsaturated surficial materials. Discharge from a drainage culvert upgradient of the well may be the source of this water. The thickness of saturated surficial materials is highly variable and appears controlled primarily by the underlying topography of the bedrock surface. The maximum thicknesses of saturated material typically occurs at topographic depressions in the bedrock surface and in the immediate vicinity of the Solar Evaporation Ponds.

Potentiometric-surface maps of groundwater in bedrock of the UHSU (Figures 3-6 to 3-9) are similar to those for groundwater in surficial materials of the UHSU, except that no areas of unsaturated bedrock have been shown. The depth to the bottom of the UHSU is not known at most well locations. Therefore, even though a well screened in the upper portion of the UHSU bedrock section is dry, the UHSU bedrock may not be unsaturated through its entire thickness. The potentiometric surface in UHSU bedrock indicates flow to both the north and east-southeast, but differs slightly from the surficial materials, in that it has a relatively flat slope beneath the solar ponds and a steep slope immediately north of the solar ponds.

3.3.2 Vertical Hydraulic Gradients

Table 3-2 presents the vertical hydraulic gradients calculated for 12 well pairs at the Solar Evaporation Ponds in 1994. One well pair reported previously was abandoned since the last report. Wells with overlapping screen intervals were not used to calculate vertical hydraulic gradients. The vertical gradient is the quotient of the difference in water levels measured during equivalent months and the vertical distance between those measuring points. With the exception of well pairs 05293/P207389 and B208689/1686, calculated vertical hydraulic gradients were directed downward during 1994. These excepted well pairs also indicated upward gradients during some portion of 1993. One of these pairs (B208689/1686) is located within the North Walnut Creek drainage. These results indicate that, within the UHSU, the potential for downward vertical flow from surficial materials into the weathered bedrock is high. Results are generally similar in magnitude and direction to results indicated for 1993.

3.3.3 Average Linear Flow Velocities

Average linear groundwater-flow velocities at and downgradient of the Solar Evaporation Ponds are presented in Table 3-3. These velocities were calculated for flow along 16 linear-flow paths in the vicinity of the Solar Evaporation Ponds. Eight of the flow paths are within UHSU surficial materials, eight of the flow paths are in bedrock of the UHSU. Changes in reported well pairs from the 1993 Annual Report were made to accommodate wells that were abandoned during 1994. Additionally, flow velocities are not calculated for LHSU bedrock pairs as was done in previous reports. Velocities were previously calculated for units that may not be continuous. As well, flow in LHSU bedrock may have a large vertical component, precluding calculation of an average linear velocity. Well pair P209089/P207789 was used to calculate flow rates within the RCRA-regulated unit because no data were available for well pair P209089/P207989, due to at least one of the wells being dry in each of the four quarterly measurements. All other well pairs were used to calculate flow rates downgradient of the RCRA unit. The geometric mean of hydraulic conductivity values (K) for UHSU alluvium in the vicinity of the Solar Evaporation Ponds (EG&G, 1995b) is 1.30×10^{-5} cm/sec. The geometric mean of the hydraulic conductivity values calculated at UHSU-bedrock wells 1486, 1686, 2786, 3486, and 2287 is 1.49×10^{-6} cm/sec. The assumed effective porosity used for all lithostratigraphic units is 0.1 (DOE, 1991a).

The calculated groundwater-flow velocities at or near the Solar Evaporation Ponds ranged from approximately 0.1 ft to 8 ft per year (Table 3-3). The highest linear-flow velocities (approximately 7 ft to 8 ft per year) were calculated for flow paths within UHSU surficial deposits downgradient of the Solar Evaporation Ponds. Velocities in alluvium (UHSU) in the North Walnut Creek drainage were approximately 4 ft to 7 ft per year. In bedrock of the UHSU, calculated average linear-flow velocities were much slower, ranging from approximately

0.32 ft to 0.36 ft per year within the Solar Evaporation Ponds area and from approximately 0.10 ft to 2.3 ft per year downgradient of the area. These average flow velocities are larger than those presented in the 1993 Annual RCRA Groundwater Monitoring Report (DOE, 1994a) due to recalculation of UHSU-bedrock hydraulic conductivity.

3.4 Groundwater Quality

Groundwater-quality data from 1994 for surficial materials and bedrock of the UHSU are presented on computer disk in Appendix B, field parameter data are summarized in Appendix E-1. The following sections summarize statistical evaluations of downgradient groundwater quality relative to unit-specific upgradient groundwater quality and describe the distribution of analytes within and adjacent to the Solar Evaporation Ponds.

3.4.1 Statistical Evaluation of Downgradient Groundwater Quality with Respect to Upgradient Groundwater Quality

Groundwater-quality data from monitoring wells located upgradient of the Solar Evaporation Ponds were compared to groundwater-quality data from monitoring wells located at the compliance boundary, to assess contaminant releases from the RCRA-regulated unit into the uppermost "aquifer" (UHSU). The comparisons were made using the statistical methodology discussed in Section 1.4.6. Statistical comparisons were performed on groundwater-quality data from the upgradient and downgradient UHSU wells listed in Table 3-4. Separate statistical comparisons were also performed for bedrock wells in the UHSU. Upgradient and downgradient wells screened in UHSU surficial materials were not included because data were not sufficient to perform the statistical comparisons. Statistical calculations are presented on computer disk in Appendix C and summarized in Tables 3-5, 3-6, and 3-7.

Statistical comparisons were not performed for analytes with less than 50% quantifiable results. The detected concentrations of these analytes in groundwater downgradient of the RCRA unit are reported in Table 3-5. In the UHSU, a large number of metals and VOCs are present downgradient of the Solar Evaporation Ponds. As shown in Table 3-5, these parameters are detectable in groundwater infrequently, or they are detected consistently in only a few downgradient wells. The infrequently detected organic constituents typically present in downgradient groundwater include 1,1,1-trichloroethane, 1,1-dichloroethane, bis(2-ethylhexyl)phthalate, carbon tetrachloride, chloroform, cis-1,2-dichloroethene, methylene chloride, tetrachloroethane, and trichloroethene. All VOCs had less than 50% quantifiable results.

For analytes with greater than 50% quantifiable results, ANOVA testing indicated statistically significant differences (at the 5% significance level) in upgradient versus downgradient groundwater quality in the UHSU for radionuclides (gross alpha, gross beta, uranium-233,234, uranium-235, uranium-238, and tritium), dissolved metals (calcium, lithium, magnesium, potassium, selenium, sodium, and strontium), and inorganic analytes (bicarbonate, chloride, fluoride, nitrate/nitrite, sulfate, total dissolved solids, and total suspended solids).

In the bedrock of the UHSU, ANOVA testing demonstrated statistically significant differences (at the 5% significance level) in upgradient versus downgradient radionuclide activities (gross alpha, gross beta, uranium-233,234, and uranium-238), and concentrations of dissolved metals (calcium, lithium, magnesium, potassium, selenium, sodium, and strontium), and inorganic analytes (chloride, fluoride, nitrate/nitrite, sulfate, total dissolved solids, and total suspended solids). All VOCs had less than 50% quantifiable results. Results of the statistical comparisons for groundwater quality in weathered bedrock are presented in Table 3-7.

3.4.2 Groundwater Quality in the Solar Evaporation Ponds Area

Chemical data describing groundwater quality in surficial materials and bedrock of the UHSU at the Solar Evaporation Ponds are presented on a computer disk in Appendix B. Selected analytes are depicted on analyte-distribution maps and/or concentration-isopleth maps in Figures

3-10 to 3-33. Analytes were selected for mapping based on the history of the waste operations at the unit, the occurrence of the analyte in downgradient wells during 1994, and the frequency of detections during 1994.

Total and dissolved radionuclides were detected in groundwater samples from both surficial materials and bedrock of the UHSU. Total radionuclide species detected in groundwater from surficial materials (Figures 3-10, 3-13, 3-16, , 3-19, and 3-22) include gross alpha, gross beta, radium-226, radium-228, uranium-233,234, uranium-235, uranium-238, total cesium, tritium, americium-241, plutonium-239,240, and strontium-89,90. These total radionuclides, as well as cesium-134 and -137, were detected in groundwater from UHSU bedrock (Figures 3-11, 3-13, 3-16, 3-19, and 3-22).

Total activities of tritium, americium-241, and plutonium-239, 240 exceeded site mean background levels (presented in Table 1-4) in UHSU surficial wells. Total activities were generally highest in surficial material wells located just inside the eastern compliance boundary of the RCRA unit. In bedrock wells, total concentrations of tritium, americium-241, and plutonium-239,240 were generally highest in wells located between the northern compliance boundary and the interceptor trench; however, only tritium activities in this area exceeded the mean background activities.

Within the Solar Evaporation Pond unit, total tritium activities ranged from less than 10 to more than 5,500 pCi/L in surficial-materials groundwater, and from less than 10 to as much as 6,142 pCi/L in groundwater of the UHSU bedrock. Activities of total uranium-235 were as high as 1.9 pCi/L in surficial materials and as high as 1.4 pCi/L in UHSU bedrock groundwater. Total plutonium-239,240 activities were generally higher in surficial-materials groundwater, (where they reached 2.0 pCi/L at well 2286), than in UHSU-bedrock groundwater (where the highest activity was 0.0076 pCi/L at well 3086). Radionuclide detections were also reported above mean background activities in groundwater from wells located north of the interceptor trench system. Statistical tests indicate americium-241 and tritium activities were significantly higher (at the 5% significance level) in downgradient well 05193, relative to upgradient activities.

Dissolved radionuclides detected in groundwater from surficial materials (Figures 3-12, 3-14, 3-17, 3-20, and 3-23) include gross alpha, gross beta, radium-226, uranium-233,234, uranium-235, uranium-238, total cesium, and strontium-89,90. In addition to these radionuclides, dissolved radium-228, cesium-134 and cesium-137 were detected in groundwater from UHSU bedrock wells (Figures 3-12, 3-15, 3-18, 3-21, and 3-23). No analyses for dissolved americium-241, plutonium-239/240, or tritium were conducted. Dissolved gross alpha, gross beta, radium-226, radium-228, uranium-233,234, uranium-235, uranium-238, and strontium-89,90 each exceeded the mean background levels. No statistically derived background activities have been established for the other dissolved constituents. As seen in the distribution of total radionuclides, exceedances of the dissolved radionuclides in UHSU groundwater for the unconsolidated surficial materials occur principally along the eastern compliance boundary. In UHSU bedrock groundwater, exceedances were generally recorded in wells located just north of the compliance boundary, as seen with the total activities.

Activities of dissolved uranium-235 were reported as high as 6.1 pCi/L in wells completed in UHSU surficial materials, and as high as 8.0 pCi/L in wells completed in UHSU bedrock. These activities were measured in samples from wells 05193 and 3086, respectively. Activities of dissolved strontium-89,90 were as high as 1.9 pCi/L in surficial materials groundwater and as high as 1.0 pCi/L in UHSU bedrock groundwater. Statistical tests indicate that dissolved strontium-89,90, gross alpha, gross beta, uranium-233,234, uranium-235, and uranium-238 were significantly greater (at the 5% significance level) downgradient of the Solar Evaporation Ponds, relative to upgradient concentrations.

The activity ratios of uranium isotopes have been used to distinguish between natural and manmade (i.e., enriched or depleted) uranium in surface water and groundwater at RFETS (EG&G, 1992 and 1993b). Ratios of uranium-233,234/238 that are between 1.0 and 3.0 are typical of natural uranium in groundwater (EG&G, 1993b). Ratios higher than 3.0 may indicate that a component of enriched uranium was present in the sample; ratios lower than 1.0 may be indicative of depleted uranium. Dissolved uranium-233,234/238 ratios were calculated for groundwater samples from the UHSU at the Solar Evaporation Ponds. These ratios are included with the data presented on Figures 3-32 and 3-33. The ratios of dissolved uranium ranged from 1.13 to 4.22 in groundwater from UHSU surficial materials and from 0.34 to 18.5 in groundwater from UHSU bedrock.

Time-series plots of radionuclides through time (1990 to 1994) showed uranium-233,234 and uranium-235 in upgradient well P209389 to contain fairly consistent activities. In upgradient well P207389, americium-241 and tritium showed a downward trend over time. In downgradient wells, tritium showed a downward trend in well 2686, and uranium-238 activities were relatively constant in well 3086. Uranium-233,234 and uranium-238 showed upward trends in downgradient well P207689; plutonium-239,240 activities were relatively constant.

For groundwater within the compliance boundary of the Solar Evaporation Pond unit, the time-series plots of radionuclides generally show relatively constant activities. Exceptions to this pattern include an upward trend for dissolved americium-241 and plutonium-239,240 in well 2286, which monitors surficial material groundwater in the unit's eastern (upgradient) area. Dissolved radium-226 in UHSU bedrock well P210189 (located in the unit's eastern area) also displayed an upward trend. Activities of total tritium in UHSU bedrock well 3086 (centrally located) showed a downward trend over time.

In 1994, organic compounds were detected in groundwater samples from 15 wells screened in surficial materials (Figure 3-24) and from 10 wells screened in bedrock of the UHSU (Figure 3-25). Compounds detected in groundwater from UHSU surficial materials include 1,1,1-trichloroethane, 1,1-dichloroethane, 1,2-dichloroethane, 1,1-dichloroethene, 1,2-dichloropropane, 1,1,2-trichloroethane, bis(2-ethylhexyl)phthalate, hexachlorocyclopentadiene, trans-1,2-dichloroethene, cis-1,2-dichloroethene, tetrachloroethene, trichloroethene, vinyl chloride, methylene chloride, carbon tetrachloride, chloroform, acetone, naphthalene, toluene, and benzene. Reported concentrations ranged from 0.1 μg/L for benzene and several other analytes to 210 μg/L for vinyl chloride. The highest concentrations of VOCs detected in groundwater from UHSU surficial materials were measured at wells P219189, 5687, and 3586; these wells are located northwest of the unit, within the unit's western compliance boundary, and southeast of the unit, respectively.

Organic compounds detected in groundwater from UHSU bedrock include 1,1,1-trichloroethane, 1,1-dichloroethane, 1,1-dichloroethene, cis-1,2-dichloroethene, tetrachloroethene, trichloroethene, diethyl phthalate, bis(2-ethylhexyl)phthalate, vinyl chloride, methylene chloride, carbon tetrachloride, chloroform, naphthalene, toluene, and benzene. Reported concentrations ranged from 0.2 μg/L for chloroform and methylene chloride, to 660 μg/L for carbon tetrachloride. The highest reported concentrations of VOCs within bedrock groundwater of the UHSU were measured in well P210189, which is located south of Pond 207-C. Concentrations in ground-water from well P210189 were reported as high as 5,200 μg/L trichloroethene, 13,000 μg/L carbon tetrachloride, 340 μg/L chloroform, and 60 μg/L cis-1,2-dichloroethene. This well also showed the highest reported detections in 1992 and 1993 (DOE, 1993a, 1994a). Well P209489 showed numerous VOC analytes detected; however, these detections were at lower reported concentrations than those for well P210189.

Groundwater from some upgradient wells also contained detectable levels of VOCs, as shown on the distribution maps for organic compounds (Figures 3-24 and 3-25). Analytes that were detected in upgradient UHSU-bedrock well P209389 include 1,1-dichloroethene, carbon tetrachloride, chloroform, tetrachloroethene, trichloroethene, cis-1,2-dichloroethene, 1,1,1-trichloroethane, and 1,1-dichloroethane. Well 5687, which is screened in alluvium and is located upgradient of the Solar Evaporation Ponds and just within the unit's compliance boundary, also showed evidence of VOC constituents in groundwater.

Concentrations of nitrate/nitrite reported for groundwater from UHSU-bedrock wells were generally higher than those reported for groundwater from surficial material wells. As discussed in the 1993 RCRA Annual Report (DOE, 1994a), nitrate/nitrite appears to be a conservative indicator of contaminant distribution and migration at the Solar Evaporation Ponds because of its high mobility in groundwater and its historical presence in the Solar Evaporation Ponds and in downgradient groundwaters. The distribution of nitrate/nitrite displayed on Figures 3-26 and 3-27 is similar to that presented and discussed in the 1993 RCRA report. Within groundwater from UHSU surficial materials, concentrations of nitrate/nitrite in groundwater were highest in areas along the eastern and southern edges of the Solar Evaporation Ponds and along North Walnut Creek, where concentrations reached 291.2 milligram/liter (mg/L) and 591.8 mg/L, respectively. Nitrate/nitrite concentrations in UHSU bedrock wells were highest along the northern edge of the Solar Evaporation Ponds, just south of the Interceptor Trench System. The nitrate/nitrite concentration of 1,883.9 mg/L reported from UHSU-bedrock well P208989 exceeded the mean background concentration (1,048.3 mg/L).

Concentration-isopleth maps of TDS (Figures 3-28 and 3-29), lithium (Figures 3-30 and 3-31) and uranium-233,234 (dissolved, Figures 3-32 and 3-33) are generally similar to those of nitrate/nitrite. In groundwater from both surficial materials and bedrock of the UHSU, these analytes had concentrations that exceeded mean background concentrations in UHSU groundwater. Concentrations of TDS and lithium were higher in groundwater from UHSU bedrock than from within UHSU surficial materials. Activities of dissolved uranium-233,234 were slightly higher in groundwater from UHSU surficial materials than in groundwater from UHSU bedrock. High uranium-233,234 activities had a more restricted distribution than nitrate/nitrite, TDS, and lithium.

Statistical tests of uranium-233,234, nitrate/nitrite, and lithium indicated that concentrations each of these constituents were significantly greater downgradient of the Solar Evaporation Ponds relative to upgradient concentrations. Total concentrations of bicarbonate, chloride, fluoride, sulfate, and TSS were also shown to be statistically higher in downgradient groundwater, as were dissolved calcium, lithium, magnesium, potassium, selenium, sodium, and strontium.

For nitrate/nitrite, TDS, and lithium, the contaminant plumes in UHSU surficial materials and the plumes in UHSU bedrock (shown on the concentration-isopleth maps) do not completely overlap. For example, the highest TDS concentrations in surficial-materials groundwater occurred east of the ponds, whereas highest concentrations of TDS in UHSU-bedrock groundwater occurred due north of the ponds. The observed offset in contaminant distribution may be due to localized variation in the direction of groundwater flow in the UHSU surficial materials (predominantly eastward) and in the UHSU bedrock (predominantly northeastward) in the vicinity of the ponds, potentially due to the effects of the Interceptor Trench System on UHSU groundwater.

In upgradient well P209389, time-series plots compiled for nitrate/nitrite show downward concentration trends over time. This same upgradient well shows an upward trend for TDS, whereas upgradient well P207389 shows consistent concentrations. No upgradient trends were apparent for lithium in any well. In downgradient well 3086, nitrate/nitrite, TDS, and lithium concentrations each showed a downward trend. TDS also showed a downward concentration trend in well P209489. Time-series plots for nitrate/nitrite, lithium, and TDS typically show consistent concentrations for wells located within the western area of the compliance unit. In the central portion of the unit, TDS, nitrate/nitrite, and lithium each show a downward trend in UHSU bedrock well 3086.

3.5 Conclusions

Groundwater flow in the area of the Solar Evaporation Ponds unit appears principally controlled by the topography of the underlying bedrock surface. Potentiometric-surface maps for UHSU surficial materials in the Solar Evaporation Ponds area indicate that groundwater flows to the north and southeast from the ponds. The potentiometric surface in UHSU bedrock also indicates groundwater flow to both the north and east-southeast, but differs slightly from the surficial materials in that it has a relatively flat slope beneath the solar ponds and a steep slope immediately north of the solar ponds.

Statistical comparisons of groundwater quality upgradient of the Solar Evaporation Ponds to groundwater quality downgradient and at the compliance boundary, indicates that the uppermost "aquifer," the UHSU, has been adversely impacted by leakage from the ponds. For analytes with greater than 50% quantifiable results, ANOVA testing indicated statistically significant increases (at the 5% significance level) in downgradient groundwater in UHSU surficial material, for radionuclides (gross alpha, gross beta, uranium-233,234, uranium-235, uranium-238, and tritium), dissolved metals (calcium, lithium, magnesium, potassium, selenium, sodium, and strontium), and inorganic analytes (bicarbonate, chloride, fluoride, nitrate/nitrite, sulfate, TDS, and total suspended solids). All VOCs had less than 50% quantifiable results.

In the bedrock groundwater of the UHSU, ANOVA testing demonstrated a statistically significant increase (at the 5% significance level) in downgradient radionuclide activities (gross alpha, gross beta, uranium-233,234, and uranium-238), concentrations of dissolved metals (calcium, lithium, magnesium, potassium, selenium, sodium, and strontium), and inorganic analytes (chloride, fluoride, nitrate/nitrite, sulfate, TDS, and total suspended solids) in comparison to upgradient groundwater. All VOCs had less than 50% quantifiable results.

Organic compounds, principally VOCs, were infrequently detected in monitoring wells for the Solar Evaporation Pond area. Detected organic compounds typically present in downgradient groundwater include 1,1,1-trichloroethane, 1,1-dichloroethane, bis(2-ethylhexyl)phthalate, carbon tetrachloride, chloroform, cis-1,2-dichloroethene, methylene chloride, tetrachloroethane, and trichloroethene. Higher concentrations of VOCs were typically found in groundwater from wells immediately adjacent to Pond 207-C.

Contaminant distributions shown on concentration-isopleth maps are distinct in surficial-material groundwater and UHSU-bedrock groundwater. The highest concentrations of contaminants in surficial-material groundwater occur principally along the eastern compliance boundary. In UHSU-bedrock groundwater, the highest concentrations are generally recorded in wells located just north of the compliance boundary. This pattern of distribution is applicable to both dissolved and total constituents. The apparent distinction may be the result of different groundwater-flow directions in the two sub-units of the UHSU; it may be an artifact of the spatial distribution of wells within these two subunits; or it may be due to the effects of the Interceptor Trench System. No wells screened in surficial materials are present immediately north of the Solar Evaporation Ponds.

4.0 GROUNDWATER MONITORING AT THE WEST SPRAY FIELD

The West Spray Field is located in the western portion of the RFETS buffer zone and covers an area of approximately 105 acres (Figure 4-1). This unit has been identified as a regulated waste-management unit because liquids contaminated with RCRA-listed hazardous wastes were applied to the area by spray irrigation.

The West Spray Field unit was operated from April 1982 to October 1985. During this period, excess liquids from Solar Ponds 207-B North and 207-B Center were periodically pumped via pipeline to the West Spray Field for spray application. The liquids applied consisted of treated sanitary effluent and groundwater from the Interceptor Trench System, both of which contained some hazardous constituents (DOE, 1988). Based on total monthly volumes of liquids applied to the West Spray Field, the maximum total application was 190 inches (in) per unit area during the four years of operation (DOE, 1992d).

The West Spray Field is no longer in operation. A closure plan has been developed through the IM/IRA process in accordance with the IAG and applicable Colorado hazardous-waste regulations. Post-closure inspection, maintenance, and monitoring of the unit will be performed in accordance with 6 CCR 1007-3, Part 265, Subpart G.

4.1 Summary of Previous Investigations

The GWAP summarizes the history of previous site-specific hydrogeologic investigations, monitoring-well installation programs, sampling and analysis programs, and evaluation procedures for the alternate groundwater-monitoring system at the West Spray Field. The GWAP also includes procedures for sample collection, preservation, and shipment, and laboratory analysis procedures and chain-of-custody control. Additional information can be found in the West Spray Field Hydrogeologic Characterization Report (DOE, 1988) and the

Annual RCRA Groundwater Monitoring Reports (DOE, 1990a; 1991a; 1992b; 1993a; and 1994a). Moreover, an RFI/RI report is currently in progress.

4.1.1 Alternate Groundwater-Monitoring Program

An "alternate" groundwater-monitoring program is currently being implemented for the West Spray Field area in accordance with 6 CCR 1007-3, sec. 265.90(d). The "alternate" designation has been applied to this unit because it has been assumed that "groundwater monitoring of indicator parameters in accordance with secs. 265.91 and 265.92 would show statistically significant increases (or decreases in the case of pH) when evaluated under sec. 265.93(b)."

4.1.2 Previous Nature and Extent of Groundwater Contamination

The nature and extent of groundwater contamination at the West Spray Field was evaluated as part of the 1989 through 1993 Annual RCRA Groundwater Monitoring Reports (DOE, 1990a; 1991a; 1992b; 1993a; and 1994a). The 1989 report concluded that alluvial groundwater had been impacted by past operations at the West Spray Field. This conclusion was based on comparisons of contaminant concentrations in groundwater from the West Spray Field to contaminant concentrations in groundwater from background locations as reported in the 1990 Background Geochemical Characterization Report (EG&G, 1990). Inorganic constituents, metals, VOCs (including tetrachloroethene and methylene chloride), and some radionuclides were detected in groundwater from the West Spray Field. Methylene chloride was frequently detected in field-blank samples at concentrations greater than or equal to concentrations in groundwater. Therefore, the presence of this analyte in groundwater samples was considered to represent laboratory contamination rather than actual groundwater contamination.

Groundwater-quality data from 1990 are similar to groundwater-quality data from 1989. Nitrate/nitrite, TDS, uranium-233,234, and some metals were detected in alluvial groundwater in 1990. Nitrate/nitrite was detected upgradient and in the eastern portion of the West Spray

Field at concentrations close to sitewide mean background levels. TDS was consistently detected above sitewide mean background concentrations upgradient, within, and downgradient of the West Spray Field. In the first quarter of 1990, uranium-233,234 activity was greater than sitewide mean background activity in groundwater from wells B410589 and B110989. In the fourth quarter of 1990, uranium-233,234 activity was greater than sitewide mean background activity in groundwater from wells 4986 and B410589. Plutonium-239,240 (dissolved), tritium, americium-241 (dissolved), and cesium-137 (dissolved) activities were above mean sitewide background in 1989, but not in 1990. Uranium-233,234 was not analyzed for in 1989. Dissolved manganese and, to a lesser degree, iron, were consistently detected above sitewide background mean concentrations. Dissolved manganese was detected in groundwater from wells in the western portion of the West Spray Field and along the eastern border of the site.

Statistical analysis of 1991 groundwater-quality data indicated that spray operations in the West Spray Field had contributed uranium-233,234, dissolved metals (sodium, magnesium, strontium, iron, manganese, and zinc), and inorganic parameters (bicarbonate, nitrate/nitrite, chloride, fluoride, and TSS) to groundwater in surficial materials. However, occasional detections of VOCs were not verified during subsequent analyses. Past operations at the West Spray Field do not appear to have impacted groundwater quality in bedrock.

Groundwater-quality data from 1992 were similar to groundwater-quality data from 1991. Radionuclides (gross alpha and uranium-233,234); dissolved metals (calcium, sodium, and vanadium); and chloride, fluoride, and silicon were detected at significantly higher activities/ concentrations in groundwater from downgradient wells than in groundwater from upgradient wells. Xylenes were detected during fourth quarter 1992 at downgradient well B110889. Concentrations of nitrate/nitrite were significantly higher in groundwater upgradient of the West Spray Field (well 5186) than in groundwater within the unit (wells 4986 and B410789).

Review of the 1993 groundwater-quality data indicated that the distributions of metals (calcium, magnesium, potassium, silicon, sodium, and strontium) and inorganic parameters (bicarbonate, chloride, and fluoride) were similar to the distributions, as discussed in the 1991 and 1992 RCRA Reports. As in years past, nitrate/nitrite was detected at highest concentrations in the upgradient well and in wells within the RCRA unit. Radionuclides were detected in 1993 in groundwater from both UHSU surficial materials and UHSU bedrock within the RCRA unit; however, gross beta, radium-226, and radium-228 rarely exceeded mean background activities. VOCs were detected more frequently in 1993 than in previous years in monitoring wells upgradient, within, and downgradient of the RCRA unit. Methylene chloride and chloroform were detected in the surficial materials, and chloroform was detected in the UHSU bedrock. Time-series plots showed no trends in concentration or activity for any parameter through time (1990 to 1993).

4.2 Current Groundwater-Monitoring Program for the West Spray Field

Groundwater-monitoring wells at or near the West Spray Field are listed in Table 4-1 and shown in Figure 4-1. There are 56 active monitoring wells and piezometers. Of these, 16 were installed as RCRA wells and are currently sampled quarterly as part of the RCRA groundwater-monitoring program. The remaining 40 active wells are also sampled quarterly. Fifteen new CERCLA regulatory wells and one plant protection well (11394) were installed in 1994. Well 4986 was scheduled for abandonment late in 1994.

The uppermost "aquifer" in the West Spray Field area is equivalent to the UHSU and comprises Rocky Flats Alluvium, valley-fill alluvium, and weathered bedrock, including claystones and subcropping sandstones. Fifty-two active wells (49 wells screened in alluvium and three wells screened in bedrock) at the West Spray Field monitor groundwater in the UHSU. Bedrock wells were assigned to a hydrostratigraphic unit based on geochemical data, hydraulic conductivity measurements (when available), and lithologic information from borehole logs.

Two active wells (4686 and 4886) are screened in unweathered siltstone and claystone and monitor groundwater in the LHSU. Groundwater in unweathered bedrock or the LHSU is not considered to have been impacted by past operations at the West Spray Field (DOE, 1991b; 1992b; and 1993a); therefore, groundwater-quality data from these wells are not presented in this report. No VOCs were detected in these wells during 1991 and 1992. Concentrations of metals and inorganic constituents were below sitewide mean background values.

Groundwater elevations in West Spray Field unit monitoring wells are measured at least quarterly, and groundwater samples are collected quarterly. Records of the laboratory analyses and statistical evaluations are maintained in compliance with 6 CCR 1007-3, sec. 265.94(b).

4.3 Groundwater Flow

As with the Solar Evaporation Ponds area, the thickness of saturated surficial materials and the direction of groundwater flow appears to be principally controlled by the topographic surface of the underlying bedrock. An east-trending bedrock ridge (EG&G, 1991a) underlies the West Spray Field unit area and appears to act as a groundwater divide. Groundwater in the UHSU north of the ridge flows generally northeast toward Walnut Creek, whereas groundwater in the UHSU south of the ridge flows toward Woman Creek.

4.3.1 Potentiometric Surface

Groundwater potentiometric data are presented in Appendix A. In general, potentiometric elevations at the West Spray Field were very similar in 1994 and 1993.

Based on the potentiometric-surface contours, it appears that the groundwater divide between Woman Creek and Walnut Creek lies along the southern boundary of the RCRA unit and trends eastward. Therefore, flow is directed to both the northeast and southeast at the West Spray Field. Figures 4-2 through 4-5 present 1994 groundwater potentiometric-surface maps of UHSU groundwater at the West Spray Field.

During 1994, as in 1993, potentiometric elevations east of the West Spray Field, near the industrialized area and near the intersection of Walnut Creek and the McKay Bypass Canal, generally fluctuated over a wider range than within the West Spray Field. Potentiometric elevations within any single well at the West Spray Field generally fluctuated in the range of approximately 1 to 9 ft, although in five wells exhibited fluctuations of more than 10 ft over the year, with a maximum of 33 ft at LHSU well 4686. Wells screened in UHSU surficial materials that showed water-level fluctuations of greater than approximately 10 ft include wells 50894 and 51194 within the West Spray Field, and wells P416089 and P416389 near the industrialized area.

4.3.2 Vertical Hydraulic Gradients

Vertical hydraulic gradients were calculated at three well pairs in the West Spray Field (see Table 4-2). Downward vertical gradients were present in these well pairs at all measurement intervals during 1994. Gradient magnitudes and directions were generally similar to those reported for 1993 (DOE, 1994a).

4.3.3 Average Linear Flow Velocities

The average linear velocity of groundwater flow in the UHSU was calculated for six flow paths in the vicinity of the West Spray Field. Following the format of previous Annual Reports, flow velocities were calculated for UHSU alluvium using a mean hydraulic-conductivity value of 4.57×10^{-4} cm/sec for Rocky Flats Alluvium near the West Spray Field (DOE, 1993). Flow velocities were calculated for one UHSU-bedrock pair using a mean hydraulic-conductivity value of 1.16×10^{-5} cm/sec measured at well 5286. The assumed effective porosity is 0.1 for both alluvium and bedrock in the UHSU (DOE, 1991a).

Using 1994 data, the average linear flow velocities calculated for groundwater in alluvial materials within the West Spray Field ranged from approximately 57 to 76 ft per year (Table 4-3). Flow velocities for alluvial groundwater downgradient of the West Spray Field ranged from 24 to 132 ft per year. The highest flow velocity (132 ft per year) was calculated for a linear path from the West Spray Field toward Woman Creek along a steep hydraulic gradient. Flow velocities calculated for groundwater in UHSU bedrock are approximately 1.3 ft per year (Table 4-3). Migration rates for conservative dissolved constituents could equal the average linear groundwater-flow velocity; however, attenuated, volatile, biodegradable, or redox-sensitive species would likely exhibit migration rates slower than the average linear groundwater-flow velocity.

4.4 Groundwater Quality

The 1994 groundwater-quality data for surficial materials at the West Spray Field are presented on computer disk in Appendix B, field parameter data are summarized in Appendix E-2. The following sections summarize statistical comparisons of upgradient/downgradient groundwater quality and describe the distribution of analytes in the vicinity of the West Spray Field.

4.4.1 Statistical Comparison of Downgradient Groundwater Quality with Respect to Upgradient Groundwater Quality

Groundwater-quality data from monitoring wells located upgradient of the West Spray Field were compared statistically to groundwater-quality data from compliance-boundary monitoring wells located downgradient of the West Spray Field. This comparison assessed potential contaminant releases from the RCRA-regulated unit into the uppermost "aquifer". The upgradient and downgradient wells used in the comparison are listed on Table 4-4. Statistical comparisons were made using the methodology discussed in Section 1.4.6. Statistical calculations are presented on computer disk in Appendix C and the results are discussed below.

Statistical comparisons were made using 1994 groundwater-quality data from the UHSU (surficial materials) in the upgradient and downgradient wells listed in Table 4-4. Groundwater-quality data from UHSU-bedrock wells were not sufficient in number to conduct statistical comparisons.

Statistical comparisons were not performed for analytes with less than 50% quantifiable results. The detectable concentrations of these parameters in groundwater downgradient of the RCRA unit are reported in Table 4-5. Dissolved aluminum, cesium, copper, iron, lithium, selenium, tin, vanadium, and zinc were infrequently detected in UHSU groundwater downgradient of the West Spray Field. Iron, lithium, and zinc were most consistently present at detectable concentrations. Methylene chloride was detected twice in one downgradient well and twice in two other downgradient wells. Tetrachloroethane and trichloroethene were detected once in one downgradient well. Unless verified by subsequent analyses, these infrequently detected VOCs are not considered indicative of contamination. The infrequently detected radionuclides typically present in downgradient groundwater include both dissolved radionuclides (total radiocesium and uranium-235) and total radionuclides (americium-241, plutonium-239/240, and tritium).

Summaries of statistical comparisons of upgradient groundwater quality to downgradient groundwater quality are shown in Table 4-6. For analytes with greater than 50% quantifiable results (Table 4-6), ANOVA testing indicated a statistically significant difference at the 5% significance level in upgradient versus downgradient groundwater quality in the UHSU for dissolved metals (calcium, magnesium, sodium, and strontium) and inorganic parameters (bicarbonate, chloride, and total dissolved solids). Concentrations of radionuclides were not statistically different (at the 5% significance level) in upgradient groundwater versus downgradient groundwater in the UHSU. All VOCs have less than 50% quantifiable results.

4.4.2 Groundwater Quality Within and Adjacent to the West Spray Field Area

Chemical data describing groundwater quality in surficial materials and bedrock of the UHSU at the West Spray Field are presented on a computer disk in Appendix B. Selected analytes are depicted on concentration-isopleth maps and/or analyte-distribution maps in Figures 4-6 to 4-19.

In 1994, total and dissolved radionuclides were detected in groundwater samples from both UHSU surficial materials and UHSU bedrock within the West Spray Field unit. Total radionuclides detected in samples from UHSU bedrock wells include gross alpha; gross beta; tritium; uranium-233,234; americium-241; plutonium-239,240; strontium-89,90; and total radiocesium. In addition to these radionuclides, uranium-235; uranium-238; radium-226; radium-228; cesium-134; and cesium-137 were detected in groundwater from surficial materials. Figures 4-6, 4-8, 4-10, 4-12, and 4-14 show the distribution of the total radionuclides reported during 1994. Activity of total plutonium-239,240 exceeded the mean background level (Table 1-4) at UHSU alluvial well 46192.

The suite of dissolved radionuclides present in groundwater from UHSU bedrock and surficial wells was similar to the suite of reported total radionuclides discussed above. With the exception of tritium, which was not reported, each of the radionuclides was also detected in dissolved samples (Figures 4-7, 4-9, 4-11, 4-13, and 4-15). Activity of radium-226 was detected at levels above mean background in groundwater from surficial materials well P416389. Statistical tests do not indicate an increased activity of these radionuclides at the 5% significance level in downgradient relative to upgradient groundwater.

Time-series plots generally showed decreasing trends in radionuclide activity in downgradient groundwater over time (1990 to 1994) when compared to upgradient groundwater. Gross beta showed a downward trend in downgradient wells 5086, and B110889. Cesium-137 showed a downward trend in well downgradient B410789. Uranium-233,234 and uranium-238 time-series plots from downgradient well 5086 showed relatively constant activities. The upgradient well 46192 showed no statistical trend in radionuclides. Time-series plots for wells within the unit's compliance boundary generally show relatively constant activities. The exception to this pattern is a downward trend for dissolved gross beta in well 411289 located in the western (upgradient) area of the unit.

Organic compounds, mostly VOCs, were detected in groundwater from monitoring wells upgradient, within, and downgradient of the RCRA-unit (Figure 4-16). Most of the reported results occurred in wells completed in surficial materials, with the exception of P416989 which showed three VOC analytes detected at levels less than 0.2 μg/L. Results from the third quarter of sampling showed a significant suite of detected analytes in UHSU groundwater from alluvial well 4986. This suite includes the following list of compounds, each of which were reported at concentrations ranging between 0.544 and 1.28 μg/L: 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 4-isopropyltoluene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, bromobenzene, chlorobenzene, ethylbenzene, hexachlorobutadiene, naphthalene, styrene, tetrachloroethene, toluene, trichloroethene, cis-1,2-dichloroethene, m- and p-xylene, n-propylbenzene, o-chlorotoluene,o-xylene, p-chlorotoluene, and sec-butylbenzene. As in 1993, methylene chloride was the analyte most frequently detected in 1994 at the West Spray Field unit; however, 1994 concentrations were approximately one order of magnitude less than corresponding levels in 1993. The highest concentration of methylene chloride detected in 1994 was 0.8 μg/L. Bis-(2-ethylhexyl) phthalate was detected a total of four times; the highest reported level was 9.0 μg/L. Chloroform, benzene, toluene, and tetrachloroethene were each reported twice in addition to well 4986, as shown on Figure 4-16.

Concentration-isopleth maps presented in Figures 4-17, 4-18, and 1-19 show the distribution of nitrate/nitrite, TDS, and chloride, respectively. Wells 4986 and B410789 and upgradient well 5186 show elevated concentrations of nitrate/nitrite (3.8 to 5.0 mg/L) relative to other West Spray Field area wells. Elevated concentrations of TDS are shown in the eastern area of the unit, continuing eastward to the West Access Road. Time-series plots for these inorganic constituents indicate a downward concentration trend for nitrate/nitrite in well 46192. A downward trend for TDS is shown in well B410789. Time-series plots for wells within the unit's compliance boundary generally show consistent concentrations for TDS, chloride, and nitrate/nitrite. The lone exception to this pattern is a downward trend for chloride in well B411289, located in the western (upgradient) area of the unit. Statistical tests show significantly greater concentrations (at the 5% significance level) of calcium, magnesium, sodium, strontium, bicarbonate, and chloride in downgradient groundwater when compared to upgradient groundwater.

4.5 Conclusions

Groundwater flow direction at the West Spray Field is generally to the east, and is evidently controlled by the topographic surface of the underlying bedrock. An east-trending bedrock ridge identified previously (EG&G, 1991a) underlies the area and apparently acts as a groundwater divide. Groundwater flow in the UHSU north of the divide is directed primarily toward the northeast into the Walnut Creek drainage; whereas flow in the UHSU south of the divide is directed to the southeast toward Woman Creek.

For analytes with greater than 50% detectable results, ANOVA testing indicated a statistically significant difference at the 5% significance level in upgradient versus downgradient groundwater quality for specific constituents in the UHSU. Downgradient concentrations were greater than upgradient concentrations in the UHSU surficial materials for some metals (calcium, magnesium, sodium, and strontium) and inorganic parameters (bicarbonate, chloride, and total dissolved solids). Groundwater-quality data from UHSU-bedrock wells were insufficient in number to conduct statistical comparisons.

Other analytes detected at the West Spray Field are portrayed on analyte-distribution maps. Total radionuclides detected in UHSU-bedrock samples include gross alpha; gross beta; tritium; uranium-233,234; americium-241; plutonium-239,240; strontium-89,90, and total radiocesium. In addition to these radionuclides, uranium-238, radium-226, radium-228, cesium-134, and cesium-137 were detected in groundwater from surficial materials.

The suite of dissolved radionuclides present in groundwater from UHSU-bedrock and surficial wells was similar to the suite of reported total radionuclides discussed above. With the exception of tritium, which was not reported, each of the radionuclides discussed above were also detected in dissolved concentrations.

The infrequently detected radionuclides typically present in downgradient groundwater include both dissolved radionuclides (total radiocesium and uranium-235) and total radionuclides (americium-241, plutonium-239,240, and tritium).

VOCs were detected in groundwater from monitoring wells upgradient, within, and downgradient of the RCRA-unit (Figure 4-16). Most of the reported results were for wells completed in surficial materials, with the exception of P416989, which showed three VOC analytes detected at levels less than 0.2 μg/L. Results of the third quarter of sampling showed a significant suite of detected analytes in UHSU groundwater at alluvial well 4986, as reported previously. As in 1993, methylene chloride was the VOC analyte most frequently detected in 1994 at the West Spray Field unit; however, 1994 concentrations were approximately one order of magnitude less than corresponding levels in 1993. The highest concentration of methylene chloride detected in 1994 was 0.8 μg/L. Analytes chloroform, benzene, toluene, and tetrachloroethene were each reported twice in wells not including well 4986.

VOCs were rarely detected in groundwater from UHSU surficial materials downgradient of the West Spray Field. Detections in downgradient wells were limited to methylene chloride, tetrachloroethane, and trichloroethene.

Concentration-isopleth maps presented previously show the distribution of nitrate/nitrite, TDS, and chloride. Wells 4986 and B410789 and upgradient well 5186 show elevated concentrations of nitrate/nitrite (3.8 to 5.0 mg/L) relative to other West Spray Field area wells. Elevated concentrations of TDS are shown in the eastern area of the unit, continuing eastward to the West Access Road.

5.0 GROUNDWATER MONITORING AT THE PRESENT LANDFILL

The Present Landfill began operating August 14, 1968, for the disposal of RFETS solid waste. The landfill has remained in operation and currently is accepting only nonhazardous solid waste. Records indicate that some hazardous waste has historically been disposed at the landfill; and, therefore, the landfill is a RCRA-regulated unit. Disposal of hazardous constituents in the landfill was halted in November 1986. Details about the construction, operation, regulatory history, and site characterization of the Present Landfill are presented in the Phase I RFI/RI Work Plan for Operable Unit No. 7—Present Landfill (DOE, 1991b). The following paragraphs provide a brief summary of unit's history.

In September 1973, tritium was detected in leachate draining from the landfill. In response to this detection, a sampling program was initiated to determine the location of the tritium source, radiation monitoring of waste prior to burial was initiated to prevent further disposal of radioactive material, and interim-response measures were undertaken to control the generation and migration of landfill leachate.

Interim-response measures included the construction of two ponds (Ponds No. 1 and No. 2, also known as the West Landfill Pond and East Landfill Pond, respectively) immediately east of the landfill, the installation of a subsurface leachate-collection system and subsurface intercept system for diverting groundwater around the landfill. Ditches were also constructed to control surface water. The influence of the groundwater diversion and leachate-collection system on groundwater flow around the landfill is discussed further in Section 5.3.

The West Landfill Pond (Pond No. 1) embankment was built approximately 500 ft east of the 1974 position of the advancing face of the landfill. The East Landfill Pond (Pond No.2) embankment was constructed approximately 1,000 ft east of the West Landfill Pond embankment. A cutoff wall, set in bedrock, was constructed in the East Landfill Pond embankment to reduce seepage through the embankment foundation. The embankments and ponds were built to collect and evaporate groundwater, surface water, and leachate collected by the subsurface drainage-control system.

The leachate-collection system and groundwater-intercept/diversion system were constructed around the west, north, and south perimeters of the landfill. The leachate-collection system was designed to provide a perimeter drain for landfill leachate to prevent migration of leachate and to reduce water levels in the landfill. The groundwater-intercept/diversion system was constructed along the outside edge of the collection system to prevent groundwater from entering the landfill area. Groundwater is diverted from the landfill toward the East Landfill Pond.

Between 1977 and 1981, the leachate-collection system was covered with waste as the landfill expanded beyond the limits of the system. The west embankment and West Landfill Pond were removed in 1981, and two slurry walls were constructed extending from the ends of the north and south groundwater-interceptor ditches. These slurry walls range in depth from 10 ft to 25 ft and were designed to be seated in bedrock.

Sometime after the Present Landfill went into operation in 1968, excess water from the landfill pond was sprayed onto a ridge south of the East Landfill Pond. The sprayed water collected on the roadway and flowed into North Walnut Creek. When this was discovered, the spraying activities were moved to an area north of the landfill pond adjacent to an irrigation ditch. Because the subsequent spray water then collected in local drainage channels and flowed around the landfill pond to the main drainage, the spraying activities were again moved. The final spray location was an area south of the west end of the landfill pond adjacent to the pond. At this location, excess spray water flowed back into the East Landfill Pond.

The landfill currently operates under interim-status RCRA regulations and accepts only nonhazardous solid waste. In the spring of 1993, the landfilled wastes covered an area of approximately 18 acres and had a volume of approximately 400,000 cubic yards. A closure plan is scheduled to be developed through the IM/IRA decision document, in accordance with the

IAG and applicable Colorado hazardous-waste regulations. Post-closure inspection, maintenance, and monitoring of the Present Landfill will be performed in accordance with 6 CCR 1007-3, Part 265, Subpart G.

5.1 Summary of Previous Investigations

Section 5.1 provides a summary of previous investigations and addresses the alternate groundwater-monitoring program and the previous nature and extent of groundwater contamination at the Present Landfill.

5.1.1 Alternate Groundwater-Monitoring Program

An "alternate" groundwater-monitoring program is being implemented at the Present Landfill in accordance with 6 CCR 1007-3, sec. 265.90(d). The alternate program is being implemented because it has been assumed that "groundwater monitoring of indicator parameters in accordance with secs. 265.91 and 265.92 would show statistically significant increases (or decreases in the case of pH) when evaluated in accordance with sec. 265.93(b)." The GWAP summarizes the history of previous site-specific hydrogeologic investigations, monitoring-well installation programs, sampling and analysis programs, and evaluation procedures for the alternate groundwater-monitoring system at the Present Landfill. The GWAP also includes procedures for sample collection, preservation, and shipment, laboratory analysis, and chain-of-custody control.

Annual RCRA Groundwater Monitoring Reports from 1989 through 1993 describe groundwater elevations, flow rates, and the results of the groundwater analyses (DOE, 1990a; 1991b; 1992b; 1993a; and 1994a). The 1994 groundwater samples were analyzed for parameters listed in Table 1-3, and the sampling and analysis records were maintained in compliance with 6 CCR 1007-3, sec. 265.94(b). The Phase I RFI/RI Work Plan for Operable Unit No. 7—Present Landfill (DOE, 1992d) presents additional information.

5.1.2 Previous Nature and Extent of Groundwater Contamination

The nature and extent of groundwater contamination was most recently evaluated in the 1993 Annual RCRA Groundwater Monitoring Report (DOE, 1994a). In 1992, groundwater from surficial deposits within and around the Present Landfill had concentrations of major inorganic ions (bicarbonate, calcium, chloride, magnesium, nitrate/nitrite, sodium, sulfate, and TDS), dissolved metals (chromium, lithium, potassium, and strontium), radionuclides, and VOCs that were elevated relative to mean background concentrations. The dissolved radionuclides present included americium-241; plutonium-239,240; uranium-233,234; uranium-238; and radium-226. During 1992, VOCs were detected sporadically and infrequently in wells screened in surficial materials. Verified detections in 1991 included 1,1,1-trichloroethane, 1,1-dichloroethene, 1,2-dichloroethene, tetrachloroethene, carbon tetrachloride, chloroethane; vinyl chloride; and trichloroethene.

Elevated concentrations of major ions (bicarbonate, chloride, sulfate, TDS, and nitrate/nitrite) were also found in groundwater from UHSU bedrock. Concentrations of dissolved metals and radionuclides were only rarely greater than sitewide mean background concentrations. VOCs were detected in two UHSU-bedrock wells during 1992. Methylene chloride, acetone, and toluene were detected once. The infrequent occurrence of VOCs in the UHSU bedrock indicated that the Present Landfill had not adversely impacted groundwater in bedrock, even though some contamination of groundwater had occurred in surficial materials overlying the bedrock.

Concentrations of major ions observed in groundwater from UHSU- and LHSU-bedrock wells were typically higher than concentrations seen in groundwater within the landfill. Thus, bedrock-groundwater quality has been considered to be influenced primarily by mineral dissolution within the sandstone and claystone units (DOE, 1990a).

Results of past hydrogeologic investigations of the Present Landfill suggest that the groundwater-intercept system may not completely isolate the landfill from the surrounding groundwater.

Hydraulic assessments for specific areas on the west, north, and south sides of the groundwater-intercept system indicate that groundwater may flow into the landfill on the landfill's west or northwest side and may be exiting the landfill near the southwest boundary at some times during the year.

In 1993, the groundwater quality at the Present Landfill appeared generally consistent with water-quality conditions of 1992. The 1993 statistical comparisons of upgradient versus downgradient UHSU groundwater at the Present Landfill indicated statistically significant increases in downgradient concentrations of calcium, lithium, magnesium, potassium, sodium, strontium, chloride, and sulfate. None of the radionuclides or VOCs showed a statistically significant difference in upgradient versus downgradient activities or concentrations, respectively. Radionuclide activities and concentrations of VOCs, metals, and inorganic parameters were notably highest within the landfill and in the area adjacent to IHSSs located southeast of the landfill relative to other areas in the vicinity of the Present Landfill. VOCs were detected infrequently in groundwater from UHSU bedrock beneath and downgradient of the landfill, but radionuclides were present in bedrock groundwater at activities higher than mean background.

5.2 Current Groundwater-Monitoring Program for the Present Landfill

The uppermost "aquifer" in the Present Landfill area is equivalent to the UHSU and is composed of saturated surficial materials and weathered bedrock. Rocky Flats Alluvium and artificial fill (landfilled wastes and soil-cover materials) are present upgradient of and within the landfill, respectively; colluvium and valley-fill alluvium are present downgradient of the Present Landfill. Weathered claystones and weathered sandstones in direct contact with the overlying surficial materials are considered part of the uppermost "aquifer." Confined hydrostratigraphic units consisting of unweathered claystones are not considered part of the uppermost "aquifer." Bedrock wells have been assigned to a hydrostratigraphic unit based on geochemical data from the well, hydraulic conductivity measurements (where available), and information from borehole logs.

A total of 53 active groundwater-monitoring wells are located at or near the Present Landfill. These wells are listed in Table 5-1 and are shown in Figure 5-1. Twenty-seven of these wells were installed as RCRA regulatory wells and are currently sampled quarterly as part of the RCRA groundwater-monitoring program for the Present Landfill. Four new characterization wells (wells 52894, 52994, 53094, and 53194) were installed late in 1994. No data from these wells were available for inclusion in this report. Of the 53 active wells, 46 wells monitor groundwater in the UHSU or the uppermost "aquifer." Thirty-five of these wells are completed in UHSU surficial materials, and 11 are screened in weathered bedrock. Six of the active bedrock wells are screened in the LHSU.

Groundwater elevations are measured at least quarterly, and groundwater samples are collected quarterly. The samples are analyzed for the constituents listed in Table 1-3. The records of analyses and evaluations are maintained in compliance with sec. 265.94(b).

5.3 Groundwater Flow

Groundwater is present in surficial deposits (Rocky Flats Alluvium, colluvium, valley-fill alluvium, and artificial fill) and in bedrock sandstones and claystones in the area of the Present Landfill. Within landfill wastes, groundwater flows toward the center of the landfill. From there, groundwater flows east toward the face of the landfill. Outside the landfill, groundwater generally flows eastward in saturated UHSU surficial deposits toward the landfill pond. Within the immediate pond area, groundwater flows toward the pond from the north, west, and south.

To control fluid flow in and around the landfill, a leachate-collection and surface-water/groundwater-diversion system was constructed in 1974 (Figure 5-1). This system was designed to collect leachate generated in the landfill and to divert surface water and groundwater around the perimeter of the landfill. The surface-water/groundwater-diversion portion of the system is located outside the leachate-collection system and is separated from the leachate-collection system by a 4.5-foot-wide zone of clayey soil. The surface-water/groundwater diversion system consists of a surface-water-intercept ditch that diverts surface water north and south of the landfill and a drain system to dewater surficial materials between the interceptor ditch and the clay barrier. In theory, landfill leachate is contained within the landfill wastes and underlying materials by the clay barrier and migrates toward the East Landfill Pond. Additional details about the configuration of the leachate-collection and surface-water/groundwater-diversion system are presented in the Phase I RFI/RI Work Plan for Operable Unit No. 7—Present Landfill (DOE, 1991b). Slurry walls added at the eastern end of the landfill divert groundwater from landfill materials placed outside the pre-existing leachate-collection system. The slurry walls may contain leachate potentially generated from these materials.

The following conclusions about the impact of the leachate-collection and groundwater-intercept systems on groundwater flow are based on water-level and groundwater-quality data (DOE, 1988 and 1991c):

- The groundwater-intercept system diverts groundwater from the west end of the landfill.
- The groundwater-intercept system does not divert all groundwater from the north and south sides of the landfill.
- The clay barrier is an effective barrier to groundwater flow in the landfill along the north side.
- The clay barrier does not appear completely effective on the south side of the landfill and may allow groundwater to enter the landfill at times.
- The groundwater-intercept system appears to function intermittently on the north side of the landfill.

Previous reports indicate that the landfill wastes extend beyond the leachate-collection system. Therefore, leachate generated outside the leachate-collection system could be collected by the groundwater-diversion system. In addition, the clay cutoff wall no longer extends to the surface of the landfill. The current configuration could allow groundwater to flow across the clay cutoff wall if the water table were to rise sufficiently. Landfill wastes do not extend to the surface-water-interceptor ditch.

At present, intercepted groundwater is discharged into the East Landfill Pond. Once this intercepted groundwater and groundwater/leachate from the landfill discharges to the landfill pond, it is retained within the pond where it either evaporates directly from the pond or is spray irrigated onto an area south of the west end of the pond. Groundwater originating upgradient from the landfill could reach the valley fill east of the pond by recharging the groundwater-intercept system which, through a system of valves and piping, can discharge to the unnamed tributary directly east of the East Landfill Pond. Groundwater-flow rates for valley-fill alluvium in the unnamed tributary have not been calculated.

5.3.1 Potentiometric Surface

Groundwater potentiometric-head data calculated from depth-to-water measurements are presented in Appendix A. In general, the potentiometric surface at the Present Landfill was similar in 1994 to 1993. The majority of wells, both inside and outside of the groundwater intercept system, indicated that water levels in 1994 were similar to those for the corresponding quarter in 1993. Deviations from this trend were limited to one specific well: B206789, located on the south side of the surface-water impoundment. Well B206789 indicated water levels approximately 1 to 5 ft lower than corresponding measurements in 1993 (DOE, 1994a). Additionally, wells along the northwest boundary of the landfill, outside of the groundwater intercept system, indicated water levels approximately 1 to 2 ft higher during the second quarter of 1994 when compared to the second quarter of 1993.

Seasonal fluctuation in potentiometric head within any single well at the Present Landfill was in the range of approximately 1 to 9 ft. However, isolated changes in potentiometric head greater than 9 ft were observed. The greatest fluctuations occurred in deeper wells set in LHSU bedrock, including wells 0886, 4187, 70593, and 70893. In general, potentiometric heads in surficial deposits, including fill materials, were highest during the second quarter (April) and lowest during the fourth quarter (October).

Potentiometric-surface maps, Figures 5-2 through 5-5, for the UHSU at the Present Landfill indicate that in 1994, as previously, the principal component of groundwater flow is downgradient toward the East Landfill Pond.

In 1993, six wells were installed inside the landfill and two wells along the perimeter. These wells provide additional potentiometric data regarding the effectiveness of the groundwater-intercept/diversion system. The potentiometric-surface maps constructed for 1994 indicate higher water-table elevations in the northern part of the landfill along the groundwater-intercept system, as was also shown in 1993. The intercept system does not appear to function as effectively on the northwest side of the landfill as along the southwest side; groundwater appears to migrate into the landfill along the north side.

5.3.2 Vertical Hydraulic Gradients

Vertical gradients were calculated at the eight well pairs listed in Table 5-2. Wells with overlapping screen intervals were not used to calculate vertical hydraulic gradients. Vertical gradient is the quotient of the differences in water levels measured concurrently in the two wells and the vertical distance between the two measuring points.

With one exception — well pair 72393/72093 in the center of the landfill—the calculated vertical gradients were all directed downward. The calculated vertical gradient at 72393/72093 ranged from approximately 0.02 to 0.03 upward for the first, second, and fourth quarters of 1994, but it was downward at 0.05 for the third quarter measurement. Vertical gradients at the Present Landfill fluctuate during the year in response to seasonal changes in the potentiometric head in surficial materials. Vertical gradients ranging from 0.38 to 0.48 downward were calculated for wells 70493 and 70593. In general, the magnitudes and directions of gradients measured at the landfill are similar to those calculated for 1993.

5.3.3 Average Linear Flow Velocities

Table 5-3 presents the calculated average linear velocities of groundwater flow during the four quarters of 1994. The average linear groundwater-flow velocity was calculated for three flow paths in UHSU surficial materials and three flow paths in UHSU bedrock in the vicinity of the Present Landfill. Migration rates for conservative, dissolved constituents approximate the average linear groundwater-flow velocity; however, attenuated, volatile, biodegradable, or redox-sensitive species probably exhibit migration rates less than the average linear groundwater-flow velocity.

The values of hydraulic conductivity used for alluvial materials and bedrock of the UHSU are the geometric means of hydraulic-conductivity values for each unit at the Present Landfill, and include results of recent slug tests reported previously (DOE, 1994a). The value of hydraulic conductivity used for alluvial material (including landfill wastes) is 1.1×10^{-4} cm/sec. Reports prior to 1993 used a hydraulic-conductivity value of 3.1×10^{-4} to 3.8×10^{-4} cm/sec. The value of hydraulic conductivity used for bedrock of the UHSU is 5.33×10^{-7} cm/sec, which is also slightly lower than the value used previous to 1993 (8.9×10^{-7} cm/sec). The assumed effective porosity for all units is 0.1 (DOE, 1991a). In 1994, the calculated flow velocities for groundwater in UHSU surficial materials were similar to those for 1993. These calculated velocities are slightly lower than previous years due to use of a lower value for hydraulic conductivity when calculating the 1993 and later flow velocities.

Calculated average linear-flow velocities in fill materials ranged from approximately 1 ft per year at the west end of the landfill to approximately 160 ft per year at the advancing face of the landfill. Calculated average linear-flow velocities in bedrock of the UHSU at the Present Landfill ranged from approximately 0.20 ft to 0.22 ft per year beneath the landfill to approximately 0.07 ft to 0.41 ft per year downgradient of the landfill. Calculated groundwater-flow velocities for UHSU bedrock in 1994 are similar to those for 1993, which are smaller than average velocities for 1992.

5.4 Groundwater Quality

Groundwater-quality data for surficial materials and bedrock of the UHSU are presented on computer disk in Appendix B, field parameter data are summarized in Appendix E-3. The following sections describe the statistical evaluation of downgradient groundwater quality with respect to upgradient groundwater quality, and the distribution of chemical parameters in groundwater in the vicinity of the Present Landfill.

5.4.1 Statistical Evaluation of Downgradient Groundwater Quality with Respect to Upgradient Groundwater Quality

Groundwater-quality data from monitoring wells located upgradient of the Present Landfill were compared to groundwater-quality data from monitoring wells located downgradient of the Present Landfill to assess potential contaminant releases to the uppermost aquifer from the RCRA-regulated unit. The comparisons between upgradient and downgradient groundwater quality were made using the statistical methodology discussed in Section 1.4.6. Statistical calculations using 1994 data from the Present Landfill are presented on computer disk in Appendix C and discussed in this subsection.

At the Present Landfill, seven wells (1086, 5887, 70093, 70193, 70393, 70493, and 70693) monitor upgradient groundwater-quality data in the UHSU immediately upgradient of the Present

Landfill. Of these wells, five are completed in surficial materials (wells 1086, 5887, 70093, 70393, and 70693), and two (wells 70193 and 70493) are completed in UHSU bedrock.

Three wells located east of the East Landfill Pond embankment monitor downgradient groundwater-quality in the UHSU. The well locations are consistent with 6 CCR 1007-3, 265.91(a)(3)(i) that allows alternate placement of monitoring wells downgradient of an interim-status facility where existing physical obstacles prevent installation of wells at the boundary. Downgradient of the Present Landfill, three wells provide groundwater-quality data for the UHSU (wells 4087, B206989, and B207089). Wells B206989 and B207089 monitor groundwater in the UHSU bedrock and well 4087 monitors groundwater quality in UHSU surficial materials. However, because the East Landfill Pond dam depresses the potentiometric surface to the east, well 4087 is frequently dry.

Statistical comparisons were made using 1994 groundwater-quality data from the entire UHSU and UHSU bedrock in the upgradient and downgradient wells listed in Table 5-4. Groundwater-quality data from downgradient UHSU surficial materials were not sufficient in number to conduct statistical tests.

Statistical comparisons were not performed for analytes with less than 50% quantifiable results. The detectable concentrations of these analytes in groundwater downgradient of the RCRA unit are reported in Table 5-5. Dissolved antimony, beryllium, cadmium, cesium, copper selenium, silver, tin, and vanadium were each detected once; zinc was detected twice in downgradient well B207089. Dissolved uranium-235 and carbonate (as $CaCO_3$) were each detected once in downgradient well B207089. The detected concentrations of these infrequently detected analytes are reported in Table 5-5. Unless verified by subsequent analyses, these infrequently detected analytes are not considered to indicate contamination.

Summaries of statistical comparisons of upgradient groundwater quality to downgradient groundwater quality are shown in Tables 5-6 and 5-7. For analytes with greater than 50%

quantifiable results (Table 5-6), ANOVA testing indicated statistically significant differences at the 5% significance level in upgradient versus downgradient groundwater quality in the UHSU for radionuclides (uranium-233,234 and uranium-238), dissolved metals (calcium, lithium, magnesium, sodium, and strontium) and inorganic parameters (bicarbonate, chloride fluoride, sulfate, and total dissolved solids). In the UHSU bedrock (Table 5-7), ANOVA testing demonstrated statistically significant differences at the 5% significance level in upgradient versus downgradient groundwater quality for dissolved metals (calcium, lithium, magnesium, sodium, and strontium) and inorganic parameters (bicarbonate, chloride sulfate, and total dissolved solids). All VOCs had less than 50% quantifiable results.

5.4.2 Groundwater Quality in the Present Landfill Area

Water-quality data from the UHSU at the Present Landfill are presented on a computer disk in Appendix B. Selected analytes are depicted on concentration-isopleth maps and analyte-distribution maps in Figures 5-6 through 5-30. Analytes were selected for mapping based on the history of the waste operations at the unit, the occurrence of the analyte in downgradient wells during 1994, and the frequency of detections during 1994.

Radionuclides were detected in groundwater from both surficial materials and bedrock of the UHSU upgradient and downgradient of the Present Landfill. Radionuclides were also detected in groundwater within landfill wastes (see Figures 5-6 through 5-25). Total activities of the following species were detected in groundwater from UHSU surficial materials and landfill wastes: gross alpha; gross beta; tritium; cesium-134; cesium-137; total radio-cesium; radium-226; strontium-89,89; uranium-233,234; uranium-235; uranium-238; americium-241; and plutonium-239,240. With the exception of plutonium-239,240, these radionuclides were also detected in groundwater from bedrock of the UHSU. The mean activities of background tritium and americium-241 were exceeded in groundwater from both UHSU surficial materials and landfill wastes. The mean activity of background americium-241 was exceeded in groundwater from UHSU bedrock upgradient of the unit; strontium-89,90 and radium-226 were exceeded in groundwater from UHSU bedrock to the southeast of the landfill, and radium-226 was exceeded in groundwater from UHSU bedrock downgradient of the landfill and pond. Statistical tests indicate that activities of uranium-233,234 and uranium-238 were significantly greater (at the 5% significance level) downgradient of the Present Landfill relative to upgradient concentrations.

Dissolved radionuclide species detected in groundwater from UHSU surficial materials and landfill wastes include gross alpha; gross beta; cesium-134; cesium-137; total radio-cesium; radium-226; strontium-89,89; uranium-233,234; uranium-235; uranium-238; americium-241; and plutonium-239,240. All radionuclides listed were also detected in groundwater from bedrock of the UHSU. The mean activities of background gross beta, radium-226, and strontium-89,90 were exceeded in groundwater from both UHSU surficial materials and landfill wastes. The mean activity of background americium-241 was exceeded in groundwater from UHSU bedrock upgradient of the unit; strontium-89,90 and radium-226 were exceeded in groundwater from UHSU bedrock to the southeast of the landfill, and radium-226 was exceeded in groundwater from UHSU bedrock downgradient of the landfill and pond. Statistical tests indicate that activities of uranium-233,234 and uranium-238 were significantly greater (at the 5% significance level) downgradient of the Present Landfill relative to upgradient concentrations.

Generally, the highest activities of radionuclides were found in the central portion of the landfill, most notably at wells 72093 and 72393. These wells are located approximately 10 ft apart and both are screened in landfill wastes. Radionuclide activities of groundwater from these two wells ranged from 30 to 57 pCi/L for gross alpha; 25 to 70 pCi/L for gross beta; 1,746 to 3,400 pCi/L for tritium; 1.2 to 2.9 pCi/L for radium-226; 0.34 to 1.5 pCi/L for strontium-89,90; 0.069 to 0.35 pCi/L for americium-241; and 0.26 to 1.6 pCi/L for plutonium-239,240.

The highest gross beta activity of 6,242 pCi/L was observed in well B206489, which monitors the surficial materials. This well is located outside the slurry wall within the southeast corner of the compliance boundary around the landfill. The second highest gross beta activity (104 pCi/L) was observed in well 70693, also screened in the surficial materials, located outside the compliance boundary to the southeast of the landfill. Based on potentiometric maps, this well could be considered upgradient of the landfill. Well B206589, which monitors the UHSU bedrock and is located near well B206489 (with the highest gross beta activity), was the bedrock well with the most radionuclide detections and also contained exceedances of mean activities of background strontium-89,90 and radium-226. These observed activities may indicate that there is a source of radionuclides to the south or that the southern portion of the containment system is not fully functional. These two wells, B206489 and B206589, are near IHSSs Nos. 166.1, 166.2, and 166.3.

Time-series plots showed decreasing trends in downgradient well B207089 through time (1990 through 1994) of uranium-233,234 relative to the consistent activities observed in the upgradient well 1086. The time-series plots for downgradient well B207089 showed consistent activities for gross alpha, gross beta, strontium-89,90, uranium-235, uranium-238, americium-241, plutonium-239,241, and tritium. The time-series plots for upgradient well 1086 showed either no trend in these radionuclides or decreasing trends in strontium-89,90 and tritium.

Organic compounds were detected in UHSU groundwater within and adjacent to the Present Landfill (see Figures 5-26 and 5-27). The compounds detected include acenaphthene, acetone, benzene, bis(2-ethylhexyl)phthalate, 2-butanone (methyl ethyl ketone), carbon tetrachloride, carbozole, chlorobenzene, chloroethane, chloroform, 1,4-dichlorobenzene, 1,1-dichloroethane, 1,1-dichloroethene, 1,2-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, 1,2-dichloropropane, diethyl phthalate, 2,4-dimethylphenol, di-n-butyl phthalate, di-n-octyl phthalate, ethylbenzene, fluorene, 4-methyl-2-pentanone, methylene chloride, 2-methylnaphthalene, naphthalene, phenanthrene, tetrachloroethene, toluene, 1,1,1-trichloroethane, trichlorethene, trichlorofluoromethane, total xylenes, and vinyl chloride. The maximum concentrations of organic compounds in UHSU groundwater at the Present Landfill occurred within landfill materials and south of the landfill adjacent to IHSSs Nos. 166.1, 166.2, and 166.3. The organic compounds were also most frequently detected in these areas. The downgradient well screened in UHSU surficial materials is often dry and, therefore, rarely sampled. No organic data were available from this well. No time trends were observed in organic compounds either upgradient or downgradient of the landfill.

VOCs were detected infrequently and at low concentrations in groundwater from UHSU bedrock. Methylene chloride was detected once in well B206689 (2 μg/L). In addition, trichloroethene was detected once in well B206289 (2 μg/L). No VOC detections were reported in UHSU-bedrock groundwater downgradient of the landfill.

Organic compounds, mostly VOCs, were also detected in groundwater upgradient of the landfill. Wells 5887 and 70393, both screened in surficial materials, and well 70493 screened in bedrock of the UHSU all reported detections of organic compounds, including trichloroethene, tetrachloroethene, 1,1,1-trichloroethane, 1,1-dichloroethane, 1,1-dichloroethene, carbon tetrachloride, bis(2-ethylhexyl)phthalate, and methylene chloride. Concentrations ranged from 0.1 μg/L to 84 μg/L. These results indicate that an upgradient source of organic contamination may be present.

Concentration-isopleth maps showing the distribution of TDS, chloride, and calcium at the Present Landfill are presented in Figures 5-28, 5-29, and 5-30, respectively. These maps indicate that the maximum concentrations of these major inorganic parameters were present in groundwater within the central portion of the landfill. In the second quarter of 1994, concentrations at well 72293 (located at the center of the east face of the landfill) were 1,649 mg/L TDS, 153 mg/L chloride, and 252 mg/L calcium. Concentrations of these three inorganic parameters were also elevated in wells B206489, B206589, and B206689 near the IHSSs 166.1, 166.2, and 166.3. Concentrations were above mean background in B206589 and B206689 for chloride and in B206489 and B206589 for calcium. These concentrations continue to support the possibility of a source south of the landfill.

Concentrations of TDS (1,938 mg/L), chloride (478.5 mg/L), and calcium (143 mg/L) were also elevated with respect to background concentrations at the downgradient wells B207089 located east of the East Landfill Pond. Statistical tests show that the concentrations of these constituents (TDS, chloride, and calcium) were significantly greater (at the 5% significance level) downgradient of the Present Landfill relative to upgradient concentrations. Lithium, magnesium, sodium, strontium, bicarbonate, fluoride, and sulfate were also significantly greater downgradient of the Present Landfill relative to the upgradient concentrations. With the exception of fluoride, concentrations of these inorganic analytes were significantly greater downgradient of the landfill in the UHSU bedrock, relative to upgradient concentrations.

Time-series plots compiled for barium, manganese, chloride, and nitrate/nitrite in downgradient well B207089 show decreasing trends in the concentrations of these parameters through time (1990 to 1994) in UHSU groundwater downgradient of the landfill. In upgradient wells, barium was observed to trend upward in well 70093, whereas manganese tended to trend downward. Other upgradient wells did not display trends for these four analytes. The time-series plots showed consistent concentrations in downgradient well B207089 for calcium, magnesium, lithium, potassium, sodium, strontium, sulfate, TDS, and TSS. There were no trends observed in these constituents for the upgradient wells except for a downward trend for potassium in well 5887.

5.5 Conclusions

Groundwater flow direction is generally to the east, with the flow components converging toward the East Landfill Pond east of the landfill. Potentiometric-surface maps of the Present Landfill vicinity show that, in 1994, the elevation of the water table was lower inside the groundwater-intercept/diversion system than outside. Within the landfill in 1994, as in 1993, groundwater elevations were higher on the north side than on the south side of the landfill, suggesting that the groundwater-diversion system performs more effectively on the southwest side of the landfill than on the northwest side. Vertical flow is upwards within the landfill materials compared to downward in the surrounding UHSU aquifer. Upward vertical flow within the landfill may limit infiltration of leachate from landfill material into surrounding UHSU groundwater.

Statistical comparisons of upgradient versus downgradient UHSU groundwater at the Present Landfill indicate statistically significant increases in downgradient activities of uranium-233, 234 and U-238 and concentrations of calcium, lithium, magnesium, sodium, strontium, bicarbonate, chloride, fluoride, sulfate, and TDS. No VOCs show a statistically significant difference in upgradient versus downgradient concentrations.

Generally, radionuclide activities and concentrations of VOCs and inorganic parameters were notably highest within the landfill and in the area adjacent to IHSSs located southeast of the landfill relative to other areas in the vicinity of the Present Landfill. VOCs were detected infrequently in groundwater from UHSU bedrock beneath and downgradient of the landfill, but radionuclides were present at activities higher than mean background in UHSU-bedrock groundwater.

Conditions at the Present Landfill in 1994 appear generally consistent with those of 1993. However, in 1994, more inorganic parameters and radionuclides displayed statistically significant increases in concentration downgradient of the RCRA-regulated unit. This increase may indicate that the groundwater-intercept system was not as effective in 1994 as in 1993, for limiting the downgradient transport of contaminants. The increase in transport may also be due to the increase in the potentiometric surface north of the landfill, which may be increasing the flow, if any, into the landfill from the north. Contaminants detected in monitoring wells southeast of the Present Landfill may be due to an inadequately functioning groundwater-intercept system in this area, emplacement of wastes beyond the limit of the intercept system, or impacts associated with other IHSSs adjacent to the landfill.

6.0 ASSESSMENT OF GROUNDWATER-MONITORING ACTIVITIES

Groundwater monitoring at the three RCRA-regulated units at RFETS continues under interim-status guidelines for compliance monitoring. Groundwater-monitoring activities at the regulated units will be evaluated further as more hydrologic and analytical data become available and if there are changes in the nature, extent, and migration characteristics of contaminants. Recommendations made in this report, and those that will be made in subsequent RCRA Groundwater Monitoring reports, are based on interpretations of the data contained in the annual RCRA reports. As pertinent information becomes available through other investigations, additional recommendations may be made in the 1994 RCRA Groundwater Monitoring Report Addendum and other reports.

6.1 Evaluation of Monitoring-Program Effectiveness

A well-evaluation project was undertaken in 1993 at RFETS (EG&G, 1993a). The project had a three-phase approach for the evaluation of existing wells and the removal of unnecessary wells from the Site Monitoring Program. All wells at RFETS, including RCRA wells, were evaluated as part of this project.

Phases I and II of the well evaluation have been implemented. The result of the first two phases was deletion from the monitoring program of wells having physical damage, incomplete well-construction details, insufficient yield for sampling water, high pH associated with improper well construction, and wells redundant with other wells. Maintenance, abandonment, and replacement of monitoring wells are performed under DOE's well abandonment and replacement program (WARP). A list of the wells abandoned under WARP was provided in the 1994 Well Evaluation Report (EG&G, 1993a). One RCRA well (well 4986 at the West Spray Field) was abandoned in 1994 based on the well-evaluation criteria. Sixteen new wells were drilled at the West Spray Field as described in Section 4, and four new wells were placed at the Present Landfill as described Section 5.

Phase III of the well-evaluation project was initiated in 1993 to determine if the existing groundwater-monitoring program at RFETS met regulatory requirements and sitewide programmatic goals. One conclusion of this evaluation was that the existing monitoring program meets the regulatory requirements for groundwater monitoring at the three RCRA-regulated units. The Final Well Evaluation Report (EG&G) presented recommendations for the design of a sitewide monitoring program and for additional geologic, hydrologic, and geochemical characterization activities.

6.2 Recommendations and Status

Comprehensive recommendations were developed, based on evaluations detailed in the Final Well Evaluation Report (EG&G), and were presented in the 1993 Annual RCRA Groundwater Monitoring Report (DOE, 1994a). These recommendations are summarized in the following tables, and include a status report for each recommendation, based on work completed during 1994. New recommendations are provided where applicable. Recommendations are provided for:

- Sitewide monitoring affecting RCRA-regulated units (Table 6-1)
- Sitewide site-characterization and data-evaluation activities affecting RCRA-regulated units (Table 6-2)
- Additional recommendations concerning the RCRA-regulated units (Table 6-3)
- Solar Evaporation Pond (Table 6-4)
- West Spray Field (Table 6-5)
- Present Landfill (Table 6-6).

Table 6-1
Recommendations and Status Concerning Sitewide Monitoring Affecting RCRA-Regulated Units

Previous Recommendations (DOE, 1994a)	Status
Monitoring water levels in most wells on a quarterly basis and monitoring water levels in a select number of wells (95) on a monthly basis.	Monitoring continuing as recommended.
Collection of groundwater samples from 142 existing wells on a semiannual basis, and collection of groundwater samples from 158 existing wells on a quarterly basis. Wells recommended for semiannual sampling will provide data to detect contaminant releases, monitor predicted contaminant-migration pathways, delineate the nature and extent of groundwater contamination, and quantify contaminant migration rates. Included in the wells recommended for quarterly sampling are wells required for compliance with RCRA at the three RCRA-regulated units and additional characterization wells at RCRA units. Quarterly sampling of the RCRA wells is required by Sections 265.94(a) and 265.94(b).	RCRA wells were sampled quarterly at the three RCRA-regulated units.
Samples collected quarterly from RCRA-regulated units would be analyzed for a slightly reduced suite of chemicals compared to the existing analytical suite. The proposed analyte list is identical to the list currently in use except that radium, strontium, and cesium radionuclides are not included.	Orthophosphate was deleted from analyte list in 1994.
New Recommendations	
No new recommendations.	

Table 6-2
Recommendations and Status Concerning Sitewide Site-Characterization and Data Evaluation Affecting RCRA-Regulated Units

Previous Recommendations (DOE, 1994a)	Status
Further characterize the bedrock paleotopographic surface to determine its effect on groundwater flow.	Appropriate sitewide bedrock surface maps have been constructed. Detailed maps for smaller areas may require further data collection.
Determine the ranges of hydraulic conductivities and calculate the average hydraulic parameters for lithostratigraphic units to characterize the UHSU at RFETS.	Completed as part of Hydrogeologic Characterization Report, Draft Final, Volume 2 of the Sitewide Geoscience Characterization Study (EG&G, 1995b).
Further characterize vertical hydraulic gradients.	Ongoing analysis, included in this report and Hydrogeologic Characterization Report, Draft Final, Volume 2 of the Sitewide Geoscience Characterization Study (EG&G, 1995b). Also see New Recommendations below.
Further evaluate contaminant concentrations in groundwater upgradient and downgradient of the Interceptor Trench System at the Solar Evaporation Ponds to assess its performance.	Analysis conducted during 1994 in the Final Well Evaluation Report (EG&G, 1994) indicates potential for groundwater flow around/beneath Interceptor Trench System. See New Recommendations below.
Initiate a program to analyze select groundwater samples for Appendix IX to 40 CFR Part 264 (Ground-Water Monitoring List) constituents to determine the presence or absence of contaminants and, thus, better define an appropriate analytical suite for groundwater samples.	Program commenced in third quarter 1994 with 40 wells sitewide, including wells at each of the RCRA-regulated units. Evaluation report anticipated in early 1995.
Evaluate the adequacy of the EMD Operating Procedure for water-level measurements (EMD Operating Procedure GW.01-Water Level Measurements in Wells and Piezometers; EG&G, 1991c) to ensure that water levels in low-yield wells have fully recovered after sampling before new water-level measurements are obtained and to verify that water retained in well sumps is not misinterpreted as representing actual groundwater elevations.	Verification that water remaining in well sumps not used as actual groundwater elevation conducted during data analysis for this report. Additionally, recovery tests were conducted for all low yielding wells during FY 94. Results have been used to help determine the schedule for water-level measurements in low yield wells.
New Recommendations	
Install cluster wells at locations indicated on Figure 6-1 in an attempt to assess groundwater interaction between bedrock and alluvial materials in stream drainages.	
Install all wells using a gravimetric technique to determine soil-core moisture. A gravimetric technique provides moisture percent by volume rather than weight.	
Consider leaving boreholes open (covered drill casing) for several days, prior to encountering visible saturation, to address potential isolated, otherwise non-observable, saturation in the vadose zone.	

Table 6-3
Additional Recommendations and Status Concerning RCRA-Regulated Units

Previous Recommendations (DOE, 1994a)	Status
Update geologic, hydrologic, and geochemical data available at locations of RCRA-monitoring wells and classify each well by hydrostratigraphic unit.	Work in progress. Updates are anticipated as part of Final Hydrogeologic Characterization Report, due in 1995.
Reduce the number of analytes used to perform comparisons of upgradient groundwater to downgradient groundwater quality to those analytes that can be used as indicators of contaminant releases from the RCRA-regulated unit. This approach is consistent with current EPA guidance for groundwater monitoring at RCRA facilities (EPA, 1992a).	This will be completed as part of 1995 Well Evaluation Report.
New Recommendations	
Recommend sampling RCRA characterization wells on a semi-annual basis, based on more than eight consecutive quarters of previously collected data. CERCLA characterization wells occurring within the RCRA-regulated units with at least eight quarters of data collected are recommended for semi-annual sampling, if they have fulfilled their required characterization purposes under CERCLA. Special purpose wells with at least eight quarters of data collected are recommended for semi-annual sampling, if they have fulfilled their required special purpose.	

Table 6-4
Recommendations and Status for Monitoring at the Solar Evaporation Pond

Previous Recommendations (DOE, 1994a)	Status
Install additional groundwater-monitoring well(s) in surficial materials upgradient of the ponds to collect groundwater-quality data for statistical comparisons.	Additional groundwater-monitoring wells, which will increase upgradient population, were proposed under Operable Unit 4 IM/IRA (DOE, 1994b).
Install groundwater-monitoring well(s) within and immediately downgradient of the Interceptor Trench System for sampling groundwater in UHSU bedrock. The wells would provide data used to evaluate contaminant transport within the UHSU from the Solar Evaporation Ponds toward North Walnut Creek.	New well location is indicated on Figure 6-1, as mentioned in New Recommendations in Table 6-2.
Install piezometer(s) in surficial materials between the ponds and the Interceptor Trench System. The piezometers would provide groundwater-elevation data to describe the extent and direction of saturated flow in surficial materials adjacent to the Solar Evaporation Ponds.	To be undertaken in 1995 as part of Operable Unit 4 Phase II RI activities.
New Recommendations	
Install new well at location indicated on Figure 6-1 downgradient of Interceptor Trench System to evaluate potential for groundwater leakage beneath/around Interceptor Trench System.	

Table 6-5
Recommendations and Status for Monitoring at the West Spray Field

Previous Recommendations (DOE, 1994a)	Status
Install additional well(s) further west (upgradient) of the existing upgradient wells to confirm the presence or absence of upgradient sources of nitrate/nitrite and uranium.	Completed during 1994.
Install nested wells (or well clusters) at discrete depths upgradient of the West Spray Field. Data from these wells would be used to identify vertical concentration gradients in groundwater, if present.	Completed during 1994 as part of Operable Unit 11 RFI.
New Recommendations	
No new recommendations.	

Table 6-6
Recommendations and Status for Monitoring at the Present Landfill

Previous Recommendations (DOE, 1994a)	Status
Replace abandoned Well 6387 and continue monitoring depth to water and groundwater quality at this location. The replacement well would provide additional data used to assess the effectiveness of the groundwater-intercept system.	Location of abandoned Well 6387 is within portion of Present Landfill in active use. Replacement of abandoned well not currently feasible.
Evaluate effectiveness of groundwater-intercept system and slurry wall in the area southeast of the landfill adjacent to IHSSs 166.1, 166.2, and 166.3. If the intercept system and slurry wall are effective in preventing migration of contaminants from the landfill, then the IHSSs east of the landfill may be the source of contaminants in groundwater southeast of the landfill.	Based on analysis reported in the Final Well Evaluation Report (EG&G, 1994) and in this report, source of contaminants unclear; however, potential for flow to south/southeast reiterated. See New Recommendation for a new monitoring well below.
New Recommendations	
Install a new monitoring well at location indicated on Figure 6-1 to assess potential for transport of constituents of concern from Present Landfill area to south/southwest. Sample wells at the Present Landfill annually for Appendix II to 6 CCR 1007-2 constituents. If any constituents are detected, sample for Appendix IA, IB, and Appendix II to 6 CCR 1007-2 constituents detected in levels statistically significantly above background. If all Appendix II constituents are shown to be at or below background values for two consecutive sampling events, contact regulatory agency to request discontinuance of sampling.	

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Table 1-1
Installation of Monitoring Wells at RFETS

Year	Total Number of Wells Installed	Number of RCRA Wells Installed		
		Solar Evaporation Ponds	West Spray Field	Present Landfill
1986	71	19	5	4
1987	67	4	-	16
1988	-	-	-	-
1989	163	37	8	13
1990	17	-	-	-
1991	143	-	-	-
1992	38	-	3	-
1993	42	4	-	-
1994	20	-	-	-

Table 1-2 (Page 1 of 7)
Comparison of Hazardous Substance List (HSL) and Target Compound List (TCL)

Analyte	HSL	TCL
Volatile Organic Compounds		
Chloromethane/Methyl chloride	X	X
Bromomethane/Methyl bromide	X	X
Vinyl chloride	X	X
Chloroethane/Ethyl chloride	X	X
Methylene chloride/Dichloromethane	X	X
Acetone	X	X
Carbon disulfide	X	X
1,1-Dichloroethene/1,1-Dichloroethylene	X	X
1,1-Dichloroethane/Ethylene dichloride	X	X
1,2-Dichloroethene (total)	X	X
Chloroform	X	X
1,2-Dichloroethane/Ethylene dichloride	X	X
2-Butanone/Methyl ethyl ketone/MEK	X	X
1,1,1-Trichloroethane/Methyl chloroform	X	X
Carbon tetrachloride	X	X
Vinyl acetate	X	X
Bromodichloromethane	X	X
1,2-Dichloropropane	X	X
cis-1,3-Dichloropropene	X	X
Trichloroethene/Trichloroethylene	X	X
Dibromochloromethane/Chlorodibromomethane	X	X
1,1,2-Trichloroethane	X	X
Benzene	X	X
trans-1,3-Dichloropropene	X	X

Table 1-2 (Page 2 of 7)
Comparison of Hazardous Substance List (HSL) and
Target Compound List (TCL)

Analyte	HSL	TCL
Volatile Organic Compounds (Continued)		
2-Chloroethyl vinyl ether	X	
Bromoform/Tribromomethane	X	X
4-Methyl-2-pentanone/MIBK	X	X
2-Hexanone	X	X
Tetrachloroethene/PCE/Tetrachloroethylene	x	X
1,1,2,2-Tetrachloroethane	X	X
Toluene	X	X
Chlorobenzene	X	X
Ethylbenzene	X	X
Styrene	X	X
Xylene (total)	X	X
Semi-Volatile Organic Compounds		
Phenol	X	X
bis-(2-Chloroethyl) ether	X	X
2-Chlorophenol/o-Chlorophenol	X	X
1,3-Dichlorobenzene/m-Dichlorobenzene	X	X
1,4-Dichlorobenzene/p-Dichlorobenzene	X	X
Benzyl alcohol	X	X
1,2-Dichlorobenzene/o-Dichlorobenzene	x	X
2-Methylphenol/o-Cresol	X	X
bis (2-Chloroisopropyl) ether	X	X
4-Methylphenol/p-Cresol	X	X
N-Nitroso-di-n-propylamine	X	X

Table 1-2 (Page 3 of 7)
Comparison of Hazardous Substance List (HSL) and Target Compound List (TCL)

Analyte	HSL	TCL
Semi-Volatile Organic Compounds (Continued)		
Hexachloroethane	X	X
Nitrobenzene	X	X
Isophorone	X	X
2-Nitrophenol/o-Nitrophenol	X	X
2,4-Dimethylphenol	X	X
Benzoic Acid	X	X
bis(2-Chloroethoxy)methane	X	X
2,4-Dichlorophenol	X	X
1,2,4-Trichlorobenzene	X	X
Naphthalene	X	X
4-Chloroaniline/p-Chloroaniline	X	X
Hexachlorobutadiene	X	X
4-Chloro-3-methylphenol/p-Chloro-m-cresol	X	X
2-Methylnaphthalene	X	X
Hexachlorocyclopentadiene	X	X
2,4,6-Trichlorophenol	X	X
2,4,5-Trichlorophenol	X	X
2-Chloronaphthalene	X	X
2-Nitroaniline/o-Nitroaniline	X	X
Dimethylphthalate	X	X
Acenaphthylene	X	X
2,6-Dinitrotoluene	X	X
3-Nitroaniline/m-Nitroaniline	X	X

Comparison of Hazardous Substance List (HSL) and
Target Compound List (TCL)

Analyte	HSL	TCL
Semi-Volatile Organic Compounds (Continued)		
4-Nitrophenol/p-Nitroaniline	X	X
4-Nitrophenol/p-Nitrophenol	X	X
Dibenzofuran	X	X
2,4-Dinitrotoluene	X	X
Diethylphthalate	X	X
4-Chlorophenyl-phenylether	X	X
Fluorene	X	X
4-Nitroaniline/p-Nitroaniline	X	X
4,6-Dinitro-2-methylphenol	X	X
N-Nitrosodiphenylamine	X	X
4-Bromophenyl-phenylether	X	X
Hexachlorobenzene	X	X
Pentachlorophenol	X	X
Phenanthrene	X	X
Anthracene	X	X
Di-n-Butylphthalate	X	X
Floranthene	X	X
Benzidiene	X	
Pyrene	X	X
Butylbenzylphthalate	X	X
3,3'-Dichlorobenzidine	X	X
Benzo [a] anthracene/1,2-Benzanthracene	X	X
Chrysene	X	X

Table 1-2 (Page 5 of 7)
Comparison of Hazardous Substance List (HSL) and Target Compound List (TCL)

Analyte	HSL	TCL
Semi-Volatile Organic Compounds (Continued)		
bis (2-Ethylhexyl) phthalate	X	X
Di-n-octylphthalate	X	X
Benzo [b] fluoranthene	X	X
Benzo [k] fluoranthene	X	X
Benzo [a] pyrene	X	X
Ideno [1,2,3-cd] pyrene	X	X
Dibenz [a,h] anthracene	X	X
Benzo [ghi] perylene	X	X
Pesticide/PCBs		
alpha-BHC	X	X
beta-BHC	X	X
delta-BHC	X	X
gamma-BHC/Lindane	X	X
Heptachlor	X	X
Aldrin	X	X
Heptachlor epoxide	X	X
Endosulfan I	X	X
Dieldrin	X	X
4,4'-DDE	X	X
Endrin	X	X
Endosulfan II	X	X
4,4'-DDD	X	X
Endosulfan sulfate	X	X

Table 1-2 (Page 6 of 7)
Comparison of Hazardous Substance List (HSL) and Target Compound List (TCL)

Analyte	HSL	TCL
Pesticide/PCBs (Continued)		
4,4'-DDT	X	X
Methoxychlor	X	X
Endrin ketone	X	X
alpha-Chlordane (shown as total on Appendix IX and HSL)		X
gamma-Chlordane (shown as total on Appendix IX and HSL)		X
Toxaphene/Camphechlor	X	X
Aroclor-1016 (shown as total on Appendix IX)	X	X
Aroclor-1221 (shown as total on Appendix IX)	X	X
Aroclor-1232 (shown as total on Appendix IX)	X	X
Aroclor-1242 (shown as total on Appendix IX)	X	X
Aroclor-1248 (shown as total on Appendix IX)	X	X
Aroclor-1254 (shown as total on Appendix IX)	X	X
Aroclor-1260 (shown as total on Appendix IX)	X	X
Endrin aldehyde	X	
TAL Metals[1]		
Aluminum	X	X
Antimony	X	X
Arsenic	X	X
Barium	X	X
Beryllium	X	X
Cadmium	X	X
Calcium	X	X
Chromium	X	X

Table 1-2 (Page 7 of 7)
Comparison of Hazardous Substance List (HSL) and Target Compound List (TCL)

Analyte	HSL	TCL
TAL Metals[1] (Continued)		
Cobalt	X	X
Copper	X	X
Iron	X	X
Lead	X	X
Magnesium	X	X
Manganese	X	X
Mercury	X	X
Nickel	X	X
Potassium	X	X
Selenium	X	X
Silver	X	X
Sodium	X	X
Thallium	X	X
Tin	X	
Vanadium	X	X
Zinc	X	X
Cyanide		X
Sulfide		

[1] Current analytical program includes cesium, chromium (VI), lithium, molybdenum, and strontium, which are non-Appendix IS and non-Target Analyte List (TAL) constituents. It also includes analysis for tin, a non-TAL constituent.

Table 1-3 (Page 1 of 3)
Chemical Constituents Monitored in Groundwater During 1994

Field Parameters pH Specific Conductance Temperature Alkalinity
Indicators Total Organic Carbon (TCC) Total Dissolved solids (TDS) Total Suspended Solids (TSS) pH[a] Orthophosphate
Metals Target Analyte List Aluminum (Al) Antimony (Sb) Arsenic (As) Barium (Ba) Beryllium (Be) Cadmium (Cd) Calcium (Ca) Chromium (Cr)[b] Cobalt (Co) Copper (Cu) Iron (Fe) Lead (Pb) Magnesium (Mg) Manganese (Mn) Mercury (Hg) Nickel (Ni) Potassium (K) Selenium (Se) Silver (Ag) Silicon (Si) Sodium (Na) Thallium (Tl) Vanadium (V) Zinc (Zn) Cesium (Cs) Lithium (Li)[c] Molybdenum (Mo) Strontium (Sr) Tin (Sn)

Chemical Constituents Monitored in Groundwater During 1994

<u>Anions</u> Ammonia Carbonate (CO_3) Bicarbonate (HCO_3) Chloride (Cl) Fluoride (F) Sulfate (SO_4) Nitrate/Nitrite (NO_2/NO_3) Cyanide (asN)[d]
<u>Volatile Organic Compounds</u>[e] Target Compound List - Volatile Chloromethane (CH_3CL) Bromomethane (CH_3Br) Vinyl Chloride (C_2H_3CL) Chloroethane (C_2H_5Cl) Methylene Chloride (CH_2CL_2) Acetone Carbon Disulfide 1,1-Dichloroethane (1,1-DCA) 1,1-Dichloroethene (1,1-DCE) trans-1,2-Dichloroethene 1,2-Dichloroethene (total) (total 1,2-DCE) Chloroform ($CHCl_3$) 1,2-Dichloroethane (1,2-DCA) 2-Butanone (MEK) 1,2-Trichloroethane (1,1,1-TCA) Carbon Tetrachloride (CCL_4) Vinyl Acetate Bromodichloromethane 1,1,2,2-Tetrachloroethane 1,2-Dichloropropane (1,2-DCP) trans-1,3-Dichloropropene Trichloroethylene (TCE) Dibromochloromethane 1,1,2-Trichloroethane Benzene cis-1,3-Dichloropropene Bromoform(CBr_4) 2-Hexanone 4-Methyl-2-pentanone Tetrachloroethene (PCE) Toluene (C_7H_8) Chloronbenzene (C_6H_5CL) Ethyl Benzene Styrene Xylenes (Total)

Table 1-3 (Page 3 of 3)
Chemical Constituents Monitored in Groundwater During 1994

Radionuclides (Dissolved and Total)[f]
Gross Alpha Gross Beta Uranium 233+234; 235; and 238 (U-233,234,235, and 238) Americium 241 (Am-241) Neptunium-237 Plutonium 239+240 (Pu-239,240) Strontium 89+90[g] (Sr-89,90)[h] Cesium 137 (Cs-137) Tritium Radium 226; 228; 238 (Ra-226,228)
Dioxins/Furans[i]
2,3,7,8-TCDD Hexachlorodibenzo-p-dioxin Pentachlorodibenzo-p-dioxin Hexachlorodibenzofuran Pentachlorodibenzofuran Tetrachlorodibenzofuran

[a] Not analyzed prior to 1989.

[b] Analyses in 1990 are for total chromium. Chromium (IV) was analyzed during fourth quarter 1987 only.

[c] Prior to 1989, lithium was only analyzed during fourth quarter 1987 and first quarter 1988.

[d] Cyanide was not analyzed during fourth quarter 1987.

[e] Not analyzed in background samples in 1989.

[f] Dissolved radionuclides replaced total radionuclides (except tritium) beginning with the third quarter 1987. During 1991 and 1992, total concentrations of Am-241, Pu-239, 240, and tritium were analyzed. In 1994, both total and dissolved radionuclides were analyzed.

[g] Strontium 89+90 was not analyzed during first quarter 1988.

[h] Not analyzed prior to 1989 and only analyzed if gross alpha exceeds 5 pCi/L.

[i] Not analyzed prior to third quarter 1994.

Table 1-4 (Page 1 of 4)
Background Groundwater Quality in the Upper Hydrostratigraphic Unit

Analyte	Dissolved (D) or Total (T)	Mean Background Concentration	Standard Deviation	Units	Sample Size, n
Metals					
Aluminum	D	59.52	87.29	μg/L	246
Antimony	D	17.34	11.10	μg/L	248
Arsenic	D	1.63	1.84	μg/L	220
Barium	D	83.42	34.56	μg/L	256
Beryllium	D	1.01	0.83	μg/L	212
Cadmium	D	1.73	1.26	μg/L	240
Calcium	D	55,414.55	32,564.11	μg/L	256
Cesium	D	202.20	285.69	μg/L	211
Chromium	D	4.84	3.80	μg/L	250
Cobalt	D	6.60	9.04	μg/L	231
Copper	D	5.01	4.42	μg/L	248
Cyanide	D	5.83	3.82	μg/L	3
Iron	D	56.26	113.44	μg/L	255
Lead	D	1.59	4.71	μg/L	251
Lithium	D	33.95	54.30	μg/L	250
Magnesium	D	10,038.28	8,309.40	μg/L	253
Manganese	D	27.47	67.43	μg/L	255
Mercury	D	0.11	0.07	μg/L	207
Molybdenum	D	19.64	33.94	μg/L	241
Nickel	D	7.01	7.18	μg/L	236
Phosphorus	D	167.00	52.43	μg/L	8
Potassium	D	1,371.50	1,069.01	μg/L	252
Selenium	D	5.58	19.07	μg/L	219

Table 1-4 (Page 2 of 4)
Background Groundwater Quality in the Upper Hydrostratigraphic Unit

Analyte	Dissolved (D) or Total (T)	Mean Background Concentration	Standard Deviation	Units	Sample Size, n
Metals (Continued)					
Silver	D	2.84	2.12	μg/L	235
Sodium	D	32,012.98	43,667.67	μg/L	254
Strontium	D	323.60	303.58	μg/L	252
Thallium	D	1.64	1.63	μg/L	212
Tin	D	30.96	37.34	μg/L	235
Vanadium	D	7.92	8.73	μg/L	249
Zinc	D	14.03	17.87	μg/L	256
Radionuclides					
Gross Alpha	D	8.35	32.32	pCi/L	213
Gross Beta	D	4.89	12.23	pCi/L	196
Radium-226	D	0.26	0.11	pCi/L	36
Radium-228	D	2.12	0.52	pCi/L	6
Strontium-89,90	D	0.34	0.31	pCi/L	180
Uranium-233,234	D	6.23	23.94	pCi/L	205
Uranium-235	D	0.20	0.64	pCi/L	207
Uranium-238	D	4.77	17.71	pCi/L	176
Americium-241	D	0.01	0.01	pCi/L	2
Cesium-137	D	0.42	0.53	pCi/L	38
Plutonium-239,240	D	0.01	---	pCi/L	1
Tritium	D	93.50	146.76	pCi/L	164
Americium-241	T	0.01	0.01	pCi/L	183
Cesium-137	T	0.12	0.33	pCi/L	156
Plutonium-239,240	T	0.00	0.02	pCi/L	194

Table 1-4 (Page 3 of 4)
Background Groundwater Quality in the Upper Hydrostratigraphic Unit

Analyte	Dissolved (D) or Total (T)	Mean Background Concentration	Standard Deviation	Units	Sample Size, n
Radionuclides (Continued)					
Tritium	T	162.14	225.49	pCi/L	83
Gross Alpha	T	43.50	94.28	pCi/L	23
Gross Beta	T	24.95	53.34	pCi/L	23
Radium-226	T	0.36	0.13	pCi/L	6
Strontium-89,90	T	0.22	0.28	pCi/L	32
Uranium-233,234	T	15.62	38.75	pCi/L	35
Uranium-235	T	0.62	1.38	pCi/L	35
Uranium-238	T	10.84	27.73	pCi/L	22
Water Quality Parameters and Anions					
Alkalinity as $CaCO_3$	T	156,900.00	158,643.41	μg/L	3
Bicarbonate	T	223,807.08	151,717.58	μg/L	311
Carbonate	T	1,824.96	3,479.53	μg/L	300
Chloride	T	12,241.67	12,930.51	μg/L	257
Cyanide	T	7.94	5.01	μg/L	66
Fluoride	T	611.07	472.04	μg/L	300
Nitrate/Nitrite	T	1,048.34	1,807.86	μg/L	305
Nitrite	T	27.94	38.25	μg/L	54
Orthophosphate	T	15.05	17.47	μg/L	191
pH	T	7.17	0.46	pH	3
Phosphorus	T	39.45	41.60	μg/L	56
Silica	T	14,082.92	8,075.96	μg/L	274
Sodium Nitrite	T	20.00	-	μg/L	1
Sulfate	T	86,370.14	174,613.96	μg/L	278

Table 1-4 (Page 4 of 4)
Background Groundwater Quality in the Upper Hydrostratigraphic Unit

Analyte	Dissolved (D) or Total (T)	Mean Background Concentration	Standard Deviation	Units	Sample Size, n
Water Quality Parameters and Anions (Continued)					
Total Suspended Solids	T	133,396.64	429,323.86	μg/L	301
Total Dissolved Solids	T	355,495.44	312,010.29	μg/L	310
Total Solids	T	24,025.00	36,789.98	μg/L	4

Source: Data obtained from Background Geochemical Characterization Report (EG&G, 1993b).

μg/L = micrograms per liter

Table 2-1
Data-Validation Summary

Analyte Group	Total Number of Results	Number Validated	(Number Rejected)	Percent Validated	(Percent Rejected)
Dissolved Metals	6954	6010	(33)	86.4	(0.6)
Total Metals	2487	2400	(12)	96.5	(0.5)
Dissolved Radionuclides	1660	1437	(35)	86.6	(2.4)
Total Radionuclides	1002	786	(22)	78.4	(2.8)
Volatile Organic Compounds	30193	17492	(257)	57.9	(0.8)
Water Quality Parameters and Anions	5992	2886	(4)	48.2	(0.1)
TOTAL	48,288	31,011	(363)	75.7	(1.2)

Table 2-2
Analytes Detected in Rinsate Samples
(above method detection limit)

Analyte	Frequency Detected[b]	Mean Result (µg/L)
Metals		
Calcium	4/16	267
Silicon	2/16	1,305
Sodium	2/16	16,100
Zinc	2/19	22
Volatile Organic Compounds		
3-Methylheptyl Acetate	1/16	0.72
Water Quality Parameters and Anions		
Ammonia[a]	3/10	185
Bicarbonate as $CaCO_3$[a]	5/16	12,752
Nitrate/Nitrite	2/16	120
Total Dissolved Solids	2/16	42,000
Total Suspended Solids	1/16	5,000
Orthophosphate	1/14	66
Sulfate	1/16	5,000
Chloride	1/16	800
Fluoride	1/16	400

[a] Detected in more than 30% of the rinsate samples
[b] Presented as number of detections/number of samples

Table 2-3 Summary of Data Accountability for 1994 RCRA Groundwater-Monitoring Program (Page 1 of 3)

SOLAR EVAPORATION PONDS

Well ID	Stratigraphic Unit[1]		Groundwater Potentiometric Heads				Metals				Radionuclides				VOCs				Inorganics			
			1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr
1386	A/U	RCRA Regulatory Well	•	•	•	ND	•	•	ND	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
1486	B/L	RCRA Characterization Well	•	•	•	ND	•	•	ND	•	•	•	ND	ND	•	•	ND	ND	•	•	•	ND
1586	A/U	RCRA Regulatory Well	•	•	•	ND	•	•	ND	•	•	•	ND	ND	•	•	•	ND	•	•	•	ND
1686	B/L	RCRA Characterization Well	•	•	•	ND	•	•	ND	•	•	•	ND	ND	•	•	•	ND	•	•	•	ND
1786	A/U	RCRA Regulatory Well	•	•	•	ND	•	•	ND	•	•	•	ND	ND	•	•	•	ND	•	•	•	ND
1886	A/U	RCRA Regulatory Well	DRY	•	DRY	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2086	A/U	RCRA Regulatory Well	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2286	A/U	RCRA Regulatory Well	•	•	•	ND	ND	•	ND	ND	•	•	•	ND	•	ND	•	ND	•	•	•	ND
2386	B/L	RCRA Characterization Well	•	•	•	ND	ND	ND	ND	ND	ND	ND	•	ND	•	•	•	ND	•	•	•	ND
2486	A/U	RCRA Regulatory Well	DRY	•	DRY	DRY	ND	ND	ND	ND	ND	•	ND	ND	ND	•	ND	ND	ND	•	ND	ND
2586	B/L	RCRA Characterization Well	•	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND
2686	A/U	RCRA Regulatory Well	•	•	•	ND	ND	•	ND	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND
2786	B/L	RCRA Characterization Well	•	•	•	ND	ND	ND	ND	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND
2886	AB	RCRA Regulatory Well	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2986	A/U	RCRA Regulatory Well	DRY	DRY	DRY	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3086	B/U	RCRA Regulatory Well	•	•	•	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND
3186	B/U	RCRA Regulatory Well	DRY	ND	DRY	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3286	B/L	RCRA Characterization Well	•	•	•	ND	•	ND	•	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
3386	A/U	RCRA Regulatory Well	ND	•	•	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3486	B/L	CERCLA Characterization Well	•	•	•	ND	•	•	ND	ND	•	•	ND	ND	•	•	•	ND	•	•	ND	ND
3586	A/U	CERCLA Characterization Well	•	•	•	ND	•	•	•	ND	•	•	•	ND	•	ND	•	ND	•	•	•	ND
3686	A/U	CERCLA Characterization Well	DRY	DRY	DRY	DRY	ND	ND	ND	ND	ND	•	ND	ND	•	•	ND	ND	ND	ND	ND	ND
2187	A/U	CERCLA Characterization Well	•	•	•	ND	ND	ND	ND	ND	ND	•	ND	ND	•	•	•	ND	•	•	•	ND
2287	B/L	CERCLA Characterization Well	•	•	•	ND	•	•	ND	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
3787	A/U	RCRA Regulatory Well	•	•	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3887	A/U	RCRA Regulatory Well	•	•	DRY	DRY	ND	ND	ND	ND	ND	•	ND	ND	•	•	ND	ND	•	ND	ND	ND
3987	B/L	RCRA Characterization Well	ND	ND	ND	ND	ND	ND	ND	ND	ND	•	ND	ND	ND	•	ND	ND	•	•	•	ND
5687	A/U	RCRA Regulatory Well	•	•	•	ND	ND	ND	ND	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
P207389	B/U	RCRA Regulatory Well	•	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND
P207489	A/U	RCRA Regulatory Well	•	•	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
P207589	B/U	RCRA Regulatory Well	•	DRY	DRY	DRY	ND	ND	ND	ND	•	ND	ND	ND	•	•	ND	ND	ND	ND	ND	ND
P207689	A/U	RCRA Regulatory Well	•	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND
P207789	B/U	RCRA Regulatory Well	•	DRY	DRY	DRY	ND	ND	ND	ND	ND	ND	•	ND	•	ND	•	ND	ND	ND	ND	ND
P207889	A/U	RCRA Regulatory Well	•	•	•	DRY	ND	•	ND	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
P207989	B/U	RCRA Regulatory Well	•	•	•	ND	ND	ND	•	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
B208089	A/U	RCRA Regulatory Well	•	•	•	ND	ND	ND	ND	ND	ND	•	ND	ND	ND	•	•	ND	•	•	•	ND
B208189	B/U	RCRA Regulatory Well	•	•	•	ND	ND	ND	ND	ND	ND	•	ND	ND	•	•	•	ND	•	•	•	ND
B208289	B/U	RCRA Regulatory Well	•	•	•	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B208389	B/U	RCRA Regulatory Well	DRY	DRY	DRY	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B208489	B/U	RCRA Regulatory Well	DRY	DRY	DRY	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B208589	A/U	RCRA Regulatory Well	•	•	DRY	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B208689	B/U	RCRA Regulatory Well	•	•	•	ND	ND	ND	ND	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND
B208789	A/U	RCRA Regulatory Well	DRY	DRY	•	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
P208889	B/L	RCRA Characterization Well	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
P208989	B/U	RCRA Regulatory Well	•	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND
P209089	B/U	RCRA Regulatory Well	•	•	•	ND	ND	ND	ND	ND	ND	ND	ND	ND	•	•	•	ND	•	•	•	ND
P209189	B/U	RCRA Regulatory Well	•	•	•	ND	•	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
P209289	A/U	RCRA Regulatory Well	DRY	•	DRY	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
P209389	B/U	RCRA Regulatory Well	•	•	•	ND	•	•	•	ND	•	•	•	ND	•	ND	•	ND	•	•	•	ND
P209489	B/U	RCRA Regulatory Well	•	•	•	ND	•	•	•	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
P209589	B/U	RCRA Regulatory Well	•	•	•	ND	ND	ND	ND	ND	ND	ND	ND	ND	•	•	•	ND	•	•	•	ND
P209689	B/U	RCRA Regulatory Well	•	DRY	DRY	DRY	ND	ND	ND	ND	ND	ND	ND	ND	•	•	•	ND	ND	•	ND	ND
P209789	A/U	RCRA Regulatory Well	•	•	•	ND	•	•	•	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
P209889	B/U	RCRA Regulatory Well	•	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND
P209989	A/U	RCRA Regulatory Well	DRY	DRY	DRY	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
P210089	B/U	RCRA Regulatory Well	•	•	•	ND	ND	•	•	ND	ND	•	ND	ND	•	•	•	ND	•	•	•	ND
P210189	B/U	RCRA Regulatory Well	•	•	•	ND	•	•	•	ND	•	•	•	ND	•	ND	•	ND	•	•	•	ND
P210289	B/U	RCRA Regulatory Well	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B210389	B/U	RCRA Regulatory Well	•	•	•	ND	ND	ND	ND	ND	•	ND	ND	ND	•	ND	ND	ND	ND	ND	ND	ND
B210489	A/U	RCRA Regulatory Well	•	•	•	ND	•	•	•	ND	•	•	ND	ND	•	•	•	ND	•	•	ND	ND
P213789	A/U	Special Purpose Well	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
P213889	B/U	RCRA Regulatory Well	DRY	DRY	DRY	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
P213989	A/U	RCRA Regulatory Well	DRY	DRY	DRY	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
P218089	A/U	Special Purpose Well	•	•	•	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	•	ND	ND	ND
P218389	A/U	RCRA Regulatory Well	•	•	•	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
P219089	A/U - B/U	Special Purpose Well	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
P219189	A/U	Special Purpose Well	•	•	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
P219489	A/U	RCRA Regulatory Well	•	•	•	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
P219589	B/U	RCRA Regulatory Well	•	•	•	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75892	A/U	CERCLA Characterization Well	DRY	DRY	DRY	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
75992	A/U	CERCLA Characterization Well	ND	•	•	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	•	ND	ND	ND	ND	ND
76192	A/U	CERCLA Characterization Well	DRY	DRY	DRY	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
76292	B/U	CERCLA Characterization Well	ND	•	•	ND	ND	•	•	ND	ND	•	ND	ND	•	•	•	ND	•	•	•	ND
05093	A/U	RCRA Regulatory Well	ND	ND	•	ND	•	•	ND	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
05193	A/U	RCRA Regulatory Well	ND	ND	•	ND	•	•	•	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
05293	A/U	RCRA Regulatory Well	ND	ND	•	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	•	•	ND	ND
05393	B/U	RCRA Regulatory Well	ND	ND	•	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = No data available prior to December 16, 1994
• = Indicates available data
1 A/U = Alluvium/upper hydrostratigraphic unit
B/U = Bedrock/upper hydrostratigraphic unit
B/L = Bedrock/lower hydrostratigraphic unit

Table 2-3 Summary of Data Accountability for 1994 RCRA Groundwater-Monitoring Program (Page 2 of 3)

WEST SPRAY FIELD

Well ID	Stratigraphic Unit[1]		Groundwater Potentiometric Heads 1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Metals 1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Radionuclides 1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	VOCs 1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Inorganics 1st Qtr	2nd Qtr	3rd Qtr	4th Qtr
4586	A/U	CERCLA Characterization Well	•	•	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4686	B/L	Special Purpose Well	•	•	•	ND	•	•	•	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
4786	A/U	Special Purpose Well	•	•	•	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND
4886	B/L	RCRA Characterization Well	•	•	•	ND	•	•	•	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
4986	A/U	RCRA Regulatory Well (abandoned 1994)	•	•	•	ND	•	•	•	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
5086	A/U	RCRA Regulatory Well	•	•	•	ND	•	ND	ND	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
5186	A/U	RCRA Regulatory Well	•	•	•	ND	•	•	•	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
5286	B/U	RCRA Characterization Well	•	•	•	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5686	A/U	CERCLA Characterization Well	•	•	•	ND	•	•	•	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
B110889	A/U	RCRA Regulatory Well	•	•	•	ND	•	•	•	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
B110989	A/U	RCRA Regulatory Well	•	•	•	ND	•	•	•	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
B111189	A/U	RCRA Regulatory Well	•	•	•	ND	•	•	•	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
P114389	A/U	Special Purpose Well	ND	ND	ND	ND	ND	ND	ND	ND	•	•	ND	ND	•	•	ND	ND	ND	•	•	ND
P114489	A/U	Special Purpose Well	ND	ND	ND	ND	ND	ND	ND	ND	•	•	ND	ND	•	•	ND	ND	•	ND	•	ND
P114589	A/U	Special Purpose Well	ND	ND	ND	ND	ND'	ND	ND	ND	ND	ND	ND	ND	•	•	ND	ND	ND	ND	•	ND
P114989	A/U	Special Purpose Well	ND	ND	ND	ND	ND	ND	ND	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
P115089	A/U	Special Purpose Well	ND	ND	ND	ND	ND	ND	ND	ND	•	•	ND	ND	•	•	ND	ND	•	•	•	ND
P115189	A/U	Special Purpose Well	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B402689	A/U	Background Characterization Well	DRY	•	DRY	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B410589	A/U	RCRA Regulatory Well	•	•	ND	ND	ND	•	ND	ND	ND	•	ND	ND	ND	•	•	ND	ND	•	•	ND
B410689	A/U	RCRA Regulatory Well	•	•	•	ND	•	•	•	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
B410789	A/U	RCRA Regulatory Well	•	•	•	ND	•	•	•	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
B411289	A/U	RCRA Regulatory Well	•	•	•	ND	•	•	•	ND	•	•	ND	ND	•	•	•	ND	•	•	ND	ND
B411389	A/U	RCRA Regulatory Well	•	•	•	ND	•	•	•	ND	•	•	ND	ND	•	•	•	ND	•	•	ND	ND
P415889	A/U	Special Purpose Well	•	•	•	ND	•	•	•	ND	•	•	ND	ND	•	•	ND	ND	•	•	•	ND
P415989	A/U	Special Purpose Well	•	•	•	ND	•	•	•	ND	•	•	ND	ND	•	•	ND	ND	•	•	•	ND
P416089	A/U	Special Purpose Well	•	•	•	ND	•	•	•	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
P416189	A/U	Special Purpose Well	ND	ND	ND	ND	•	•	•	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
P416289	A/U	Special Purpose Well	ND	ND	ND	ND	•	•	•	ND	ND	•	ND	ND	•	•	ND	ND	•	•	•	ND
P416389	A/U	Special Purpose Well	•	•	•	ND	•	•	•	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
P416489	A/U	Special Purpose Well	ND	ND	ND	ND	•	•	•	ND	•	•	ND	ND	•	•	ND	ND	•	ND	•	ND
P416589	A/U	Special Purpose Well	ND	ND	ND	ND	•	•	•	ND	•	•	•	ND	•	•	ND	ND	•	•	•	ND
P416989	B/L	Special Purpose Well	ND	ND	ND	ND	•	•	•	ND	•	•	ND	ND	•	•	ND	ND	•	•	•	ND
0190	A/U	Special Purpose Well	•	•	•	ND	ND	ND	ND	ND	•	•	ND	ND	•	•	•	ND	•	•	ND	ND
0390	A/U	Special Purpose Well	•	•	•	ND	ND	ND	ND	ND	•	•	ND	ND	ND	•	•	ND	•	•	•	ND
1490	A/U	Special Purpose Well	•	•	•	ND	ND	ND	ND	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
03092	A/U	Special Purpose Well	DRY	DRY	DRY	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
03192	A/U	Special Purpose Well	DRY	DRY	DRY	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
46192	A/U	RCRA Regulatory Well	•	•	•	ND	•	•	ND	ND	•	•	•	ND	•	•	ND	ND	•	•	•	ND
46292	A/U	RCRA Regulatory Well	•	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	ND	ND	•	•	•	ND
46392	B/U	RCRA Characterization Well	•	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND
46492	A/U	CERCLA Regulatory Well	•	•	•	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND	•	•	ND	ND
11394	A/U	Special Purpose Well	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
50194	A/U	CERCLA Characterization well	ND	ND	ND	•	ND	ND	ND	ND	ND	ND	•	ND	ND	ND	•	ND	ND	ND	•	ND
50294	A/U	CERCLA Characterization Well	ND	ND	ND	•	ND	ND	ND	ND	ND	ND	•	ND	ND	ND	ND	ND	ND	ND	ND	ND
50394	A/U	CERCLA Characterization Well	ND	ND	ND	•	ND	ND	ND	ND	ND	ND	•	ND	ND	ND	•	ND	ND	ND	•	ND
50494	A/U	CERCLA Characterization Well	ND	ND	ND	•	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	•	ND	ND	ND	•	ND
50694	A/U	CERCLA Characterization Well	ND	ND	ND	•	ND	ND	ND	ND	ND	ND	•	ND	ND	ND	ND	ND	ND	ND	ND	ND
50794	A/U	CERCLA Characterization Well	ND	ND	ND	•	ND	ND	ND	ND	ND	ND	•	ND	ND	ND	ND	ND	ND	ND	•	ND
50894	A/U	CERCLA Characterization Well	ND	ND	ND	•	ND	ND	ND	ND	ND	ND	•	ND	ND	ND	•	ND	ND	ND	•	ND
50994	A/U	CERCLA Characterization Well	ND	ND	ND	•	ND	ND	ND	ND	ND	ND	•	ND	ND	ND	•	ND	ND	ND	•	ND
51094	A/U	CERCLA Characterization Well	ND	ND	ND	•	ND	ND	ND	ND	ND	ND	•	ND	ND	ND	•	ND	ND	ND	•	ND
51194	A/U	CERCLA Characterization Well	ND	ND	ND	•	ND	ND	ND	ND	ND	ND	•	ND	ND	ND	•	ND	ND	ND	•	ND
51294	A/U	CERCLA Characterization Well	ND	ND	ND	•	ND	ND	ND	ND	ND	ND	•	ND	ND	ND	•	ND	ND	ND	•	ND
51494	A/U	CERCLA Characterization Well	ND	ND	ND	•	ND	ND	ND	ND	ND	ND	•	ND	ND	ND	•	ND	ND	ND	•	ND
51594	A/U	CERCLA Characterization Well	ND	ND	ND	•	ND	ND	ND	ND	ND	ND	•	ND	ND	ND	•	ND	ND	ND	•	ND
51694	A/U	CERCLA Characterization Well	ND	ND	ND	•	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
51794	A/U	CERCLA Characterization Well	ND	ND	ND	•	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = No data available prior to December 16, 1994
• = Data available
1 A/U = Alluvium/upper hydrostratigraphic unit
B/U = Bedrock/upper hydrostratigraphic unit
B/L = Bedrock/lower hydrostratigraphic unit

Table 2-3 Summary of Data Accountability for 1994 RCRA Groundwater-Monitoring Program (Page 3 of 3)

PRESENT LANDFILL

	Stratigraphic		Groundwater Potentiometric Heads				Metals				Radionuclides				VOCs				Inorganics			
Well ID	Unit[1]		1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr
0586	A/U	CERCLA Characterization Well	•	•	•	ND	ND	•	ND	ND	ND	•	ND	ND	•	•	•	ND	ND	•	ND	ND
0686	A/U	Special Purpose Well	DRY	DRY	DRY	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	•	ND	ND	ND	ND	ND
0786	A/U	RCRA Regulatory Well	•	•	•	ND	ND	ND	ND	ND	•	•	ND	ND	•	•	•	ND	ND	•	•	ND
0886	B/L	RCRA Regulatory Well	•	•	•	ND	ND	ND	ND	ND	ND	ND	ND	ND	•	•	•	ND	ND	•	•	ND
0986	B/L	RCRA Characterization Well	•	•	•	ND	•	ND	ND	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
1086	A/U	RCRA Regulatory Well	•	•	•	ND	•	•	ND	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
4087	A/U	RCRA Regulatory Well	DRY	•	•	DRY	ND	ND	ND	ND	ND	ND	•	ND	ND	ND	•	ND	ND	ND	•	ND
4187	B/L	RCRA Characterization Well	•	•	•	ND	ND	ND	ND	ND	ND	•	ND	ND	•	•	•	ND	•	•	•	ND
4287	A/U	CERCLA Characterization Well	•	•	•	DRY	•	ND	ND	ND	•	•	ND	ND	•	•	ND	ND	•	•	ND	ND
5887	A/U	RCRA Regulatory Well	•	•	•	ND	•	•	ND	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
5987	A/U	RCRA Regulatory Well	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6087	A/U	RCRA Regulatory Well	•	•	•	ND	•	•	ND	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
6187	A/U	RCRA Regulatory Well	•	•	•	ND	•	ND	ND	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
6287	A/U	RCRA Regulatory Well	•	•	•	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	•	ND	ND	ND	•	ND
6387	A/U	RCRA Regulatory Well	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6487	A/U	RCRA Regulatory Well	•	•	•	ND	ND	ND	ND	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
6587	A/U	RCRA Regulatory Well	•	•	•	ND	•	ND	ND	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
6687	A/U	RCRA Regulatory Well	•	•	•	ND	ND	ND	ND	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
6787	A/U	RCRA Regulatory Well	•	•	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6887	A/U	RCRA Regulatory Well	•	•	•	ND	•	•	ND	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
7087	A/U	RCRA Regulatory Well	•	•	•	ND	•	•	ND	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
7187	A/U	RCRA Regulatory Well	•	•	•	ND	•	•	•	•	•	•	ND	ND	•	•	•	ND	•	•	•	ND
7287	A/U	RCRA Regulatory Well	•	•	•	ND	•	•	•	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
B106089	A/U	RCRA Regulatory Well	•	•	•	ND	ND	•	ND	ND	ND	•	ND	ND	•	•	•	ND	ND	•	•	ND
B206189	B/U	RCRA Regulatory Well	•	•	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B206289	B/U	RCRA Regulatory Well	•	•	•	ND	•	•	ND	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
B206389	A/U	RCRA Regulatory Well	•	•	•	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B206489	A/U	RCRA Regulatory Well	•	•	•	ND	•	•	ND	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND
B206589	B/U	RCRA Regulatory Well	•	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND
B206689	B/U	RCRA Regulatory Well	•	•	•	ND	ND	ND	•	ND	ND	•	ND	ND	•	•	•	ND	•	•	•	ND
B206789	B/U	RCRA Regulatory Well	•	•	•	ND	ND	•	ND	•	•	•	ND	ND	•	•	•	ND	•	•	•	ND
B206889	B/U	RCRA Regulatory Well	•	•	•	ND	ND	ND	ND	ND	ND	•	ND	ND	•	•	•	ND	ND	•	•	ND
B206989	B/U	RCRA Regulatory Well	•	DRY	•	ND	ND	ND	ND	ND	ND	•	ND	ND	•	•	•	ND	ND	•	•	ND
B207089	B/U	RCRA Regulatory Well	•	•	•	ND	•	•	•	•	•	•	ND	ND	•	•	•	ND	•	•	•	ND
B207189	B/L	RCRA Characterization Well	•	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B207289	B/U	RCRA Regulatory Well	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
76792	A/U	CERCLA Characterization Well	DRY	DRY	DRY	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
76992	A/U	CERCLA Characterization Well	DRY	DRY	•	DRY	ND	•	ND	ND	ND	•	ND	ND	ND	•	•	ND	ND	•	ND	ND
77392	A/U	CERCLA Characterization Well	DRY	DRY	DRY	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
70093	A/U	CERCLA Characterization Well	ND	•	•	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND
70193	B/U	CERCLA Characterization Well	ND	•	•	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND
70293	B/L	CERCLA Characterization Well	ND	•	•	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND
70393	A/U	CERCLA Characterization Well	ND	•	•	ND	•	•	ND	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND
70493	B/U	CERCLA Characterization Well	ND	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND
70593	B/L	CERCLA Characterization Well	ND	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND
70693	A/U	CERCLA Characterization Well	ND	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND
70893	B/L	CERCLA Characterization Well	ND	DRY	•	ND	•	ND	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND
71193	A/U	CERCLA Characterization Well	ND	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND
71493	A/U	CERCLA Characterization Well	ND	•	•	ND	ND	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND
71693	A/U	CERCLA Characterization Well	ND	DRY	DRY	ND	ND	•	ND	ND	ND	•	ND	ND	ND	•	ND	ND	ND	•	ND	ND
71893	A/U	CERCLA Characterization Well	ND	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	ND	ND
72093	A/U	CERCLA Characterization Well	ND	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND
72293	A/U	CERCLA Characterization Well	ND	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND
72393	A/U	CERCLA Characterization Well	ND	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND	•	•	•	ND
72493	A/U	CERCLA Characterization Well	ND	DRY	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
52894	A/U	CERCLA Characterization Well	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
52994	A/U	CERCLA Characterization Well	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
53094	A/U	CERCLA Characterization Well	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
53194	A/U	CERCLA Characterization Well	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = No data available prior to December 16, 1994
• = Indicates available data
[1] A/U = Alluvium/upper hydrostratigraphic unit
B/U = Bedrock/upper hydrostratigraphic unit
B/L = Bedrock/lower hydrostratigraphic unit

Table 3-1 (Page 1 of 3)
Groundwater Monitoring Wells at or Near the Solar Evaporation Ponds

Well ID	Screened Unit[a]	Hydrostratigraphic Unit[b]	Well Status[c]	Well Classification
1386	Qc	A/U	Active	RCRA Regulatory Well
1486	Kss/Ksclst	B/L	Active	RCRA Characterization Well
1586	Qc	A/U	Active	RCRA Regulatory Well
1686	Ksltss	B/L	Active	RCRA Characterization Well
1786	Qc	A/U	Active	RCRA Regulatory Well
1886	Qc	A/U	Active	RCRA Regulatory Well
2286	Qrf	A/U	Active	RCRA Regulatory Well
2386	Kslt/Ksltclst	B/L	Active	RCRA Characterization Well
2486	Qrf	A/U	Active	RCRA Regulatory Well
2586	Ksltclst/Kclst	B/L	Active	RCRA Characterization Well
2686	Qrf	A/U	Active	RCRA Regulatory Well
2786	Ksslt/Ksclst	B/L	Active	RCRA Characterization Well
2986	Qrf	A/U	Active	RCRA Regulatory Well
3086	Kclst	B/U	Active	RCRA Regulatory Well
3186	Kss/Kslt	B/U	Active	RCRA Regulatory Well
3286	Kss/Ksltss	B/L	Active	RCRA Characterization Well
3386	Qrf	A/U	Active	RCRA Regulatory Well
3486	Kcslt	B/L	Active	CERCLA Characterization Well
3586	Qc	A/U	Active	CERCLA Characterization Well
3686	Qc	A/U	Active	CERCLA Characterization Well
2187	Qc	A/U	Active	CERCLA Characterization Well
2287	Kss/Kslt	B/L	Active	CERCLA Characterization Well
3887	Qrf	A/U	Active	RCRA Regulatory Well
3987	Ksslt/Kclst	B/L	Active	RCRA Characterization Well
5687	Qrf	A/U	Active	RCRA Regulatory Well
P207389	Kss/Kclst	B/U	Active	RCRA Regulatory Well
P207589	Ksltclst	B/U	Active	RCRA Regulatory Well
P207689	Qrf	A/U	Active	RCRA Regulatory Well

Table 3-1 (Page 2 of 3)
Groundwater Monitoring Wells at or Near the Solar Evaporation Ponds

Well ID	Screened Unit[a]	Hydrostratigraphic Unit[b]	Well Status[c]	Well Classification
P207789	Ksltclst	B/U	Active	RCRA Regulatory Well
P207889	Qrf	A/U	Active	RCRA Regulatory Well
P207989	Kclst	B/U	Active	RCRA Regulatory Well
B208089	Qc	A/U	Active	RCRA Regulatory Well
B208189	Kclst	B/U	Active	RCRA Regulatory Well
B208289	Ksltclst/Kclst	B/U	Active	RCRA Regulatory Well
B208389	Ksclst/Kclst	B/U	Active	RCRA Regulatory Well
B208489	Kclst	B/U	Active	RCRA Regulatory Well
B208589	Qc	A/U	Active	RCRA Regulatory Well
B208689	Ksltclst	B/U	Active	RCRA Regulatory Well
B208789	Qc	A/U	Active	RCRA Regulatory Well
P208889	Ksltclst	B/L	Active	RCRA Characterization Well
P208989	Ksltss/Ksltclst	B/U	Active	RCRA Regulatory Well
P209089	Ksltclst	B/U	Active	RCRA Regulatory Well
P209189	Kss/Ksltclst	B/U	Active	RCRA Regulatory Well
P209289	Qrf	A/U	Active	RCRA Regulatory Well
P209389	Kss/Ksltss/Kcss	B/U	Active	RCRA Regulatory Well
P209489	Kss/Ksltss	B/U	Active	RCRA Regulatory Well
P209589	Ksltclst/Ksclst	B/U	Active	RCRA Regulatory Well
P209689	Ksltclst	B/U	Active	RCRA Regulatory Well
P209789	Qrf	A/U	Active	RCRA Regulatory Well
P209889	Ksltclst	B/U	Active	RCRA Regulatory Well
P210089	Ksltclst	B/U	Active	RCRA Regulatory Well
P210189	Ksltss/Ksclst	B/U	Active	RCRA Regulatory Well
B210389	Ksltclst	B/U	Active	RCRA Regulatory Well
B210489	Qc	A/U	Active	RCRA Regulatory Well
P213789	Qc	A/U	Active	Special Purpose Well
P213889	Kss/Kcss	B/U	Active	RCRA Regulatory Well

Table 3-1 (Page 3 of 3)
Groundwater Monitoring Wells at or Near the Solar Evaporation Ponds

Well ID	Screened Unit[a]	Hydrostratigraphic Unit[b]	Well Status[c]	Well Classification
P213989	Qrf	A/U	Active	RCRA Regulatory Well
P218089	Qrf	A/U	Active	Special Purpose Well
P218389	Qrf	A/U	Active	RCRA Regulatory Well
P219189	Qc	A/U	Active	Special Purpose Well
P219489	Qrf	A/U	Active	RCRA Regulatory Well
P219589	Kclst/Ksclst	B/U	Active	RCRA Regulatory Well
02691	Ksltss/Ksltclst	B/U	Active	CERCLA Characterization Well
75892	Qrf	A/U	Active	CERCLA Characterization Well
75992	Qc	A/U	Active	CERCLA Characterization Well
76192	Qrf	A/U	Active	CERCLA Characterization Well
76292	Kcss	B/U	Active	CERCLA Characterization Well
05093	Qrf	A/U	Active	RCRA Regulatory Well
05193	Qrf	A/U	Active	RCRA Regulatory Well
05293	Qrf	A/U	Active	RCRA Regulatory Well
05393	Ksclst/Ksslt	B/U	Active	RCRA Regulatory Well

[a] From EG&G's database of well-construction details
Qc = Quaternary colluvium
Qrf = Quaternary Rocky Flats Alluvium
Kss = Cretaceous sandstone
Ksclt = Cretaceous sandy claystone
Ksltss = Cretaceous silty sandstone
Kslt = Cretaceous siltstone
Ksltclst = Cretaceous silty claystone
Kclst = Cretaceous claystone
Ksslt = Cretaceous sandy siltstone
Kcslt = Cretaceous clayey siltstone
Kcss = Cretaceous clayey sandstone

[b] A/U = alluvium/upper hydrostratigraphic unit
B/U = bedrock/upper hydrostratigraphic unit
B/L = bedrock/lower hydrostratigraphic unit

[c] Active = Well is currently being sampled
Inactive = Well is intact, but not currently being sampled
Abandoned = Well was abandoned in 1993 and is no longer sampled

Table 3-2 (Page 1 of 3)
Vertical Hydraulic Gradients at or Near the Solar Evaporation Ponds

Well Pair[a]	Quarter	Vertical Hydraulic Gradient[b] (dh/dl)	
P209289/P209389 (A/U to B/U)	1st	0.414	downward gradient
	2nd	0.254	downward gradient
	3rd	0.351	downward gradient
	4th	0.297	downward gradient
2286/P210189 (A/U to B/U)	1st	0.080	downward gradient
	2nd	0.076	downward gradient
	3rd	0.086	downward gradient
	4th	0.072	downward gradient
2486/2386 (A/U to B/L)	1st	ND	
	2nd	0.852	downward gradient
	3rd	ND	
	4th	ND	
05293/P207389 (A/U to B/U)	1st	-0.124	upward gradient
	2nd	-0.052	upward gradient
	3rd	-0.068	upward gradient
	4th	-0.573	upward gradient
2686/P207589 (A/U to B/U)	1st	1.130	downward gradient
	2nd	1.215	downward gradient
	3rd	1.172	downward gradient
	4th	1.109	downward gradient

Table 3-2 (Page 2 of 3)
Vertical Hydraulic Gradients at or Near the Solar Evaporation Ponds

Well Pair[a]	Quarter	Vertical Hydraulic Gradient[b] (dh/dl)	
P207589/2586 (B/U to B/L)	1st	0.022	downward gradient
	2nd	0.091	downward gradient
	3rd	0.018	downward gradient
	4th	0.043	downward gradient
05093/2786 (A/U to B/L)	1st	0.548	downward gradient
	2nd	0.748	downward gradient
	3rd	0.582	downward gradient
	4th	0.548	downward gradient
B208089/B208189 (A/U to B/U)	1st	0.702	downward gradient
	2nd	0.688	downward gradient
	3rd	0.065	downward gradient
	4th	0.709	downward gradient
P207889/P207989 (A/U to B/U)	1st	1.089	downward gradient
	2nd	1.394	downward gradient
	3rd	1.163	downward gradient
	4th	0.872	downward gradient
P207689/P207789 (A/U to B/U)	1st	1.450	downward gradient
	2nd	1.482	downward gradient
	3rd	1.446	downward gradient
	4th	1.397	downward gradient

Table 3-2 (Page 3 of 3)
Vertical Hydraulic Gradients at or Near the Solar Evaporation Ponds

Well Pair[a]	Quarter	Vertical Hydraulic Gradient[b] (dh/dl)	
1586/1486 (A/U to B/L)	1st	0.172	downward gradient
	2nd	0.192	downward gradient
	3rd	0.210	downward gradient
	4th	0.187	downward gradient
B208689/1686 (B/U to B/L)	1st	-0.436	upward gradient
	2nd	-0.516	upward gradient
	3rd	-0.564	upward gradient
	4th	-0.316	upward gradient

[a] A/U = alluvium/upper hydrostratigraphic unit
B/U = bedrock/upper hydrostratigraphic unit
B/L = bedrock/lower hydrostratigraphic unit

[b] ND = No data, value cannot be calculated due to insufficient data.
dh/dl = hydraulic gradient

Table 3-3 (Page 1 of 4)
Average Linear Flow Velocities at or Near the Solar Evaporation Ponds

Well Pair	Quarter	dh/dl[a]	K (in cm/sec)[b]	n[c]	v (in cm/sec)[a,d]	v (in ft/yr)[a,d]
Bedrock of the UHSU						
P209089/P207989	1st	ND	1.49×10^{-6}	0.1	ND	ND
	2nd	ND	1.49×10^{-6}	0.1	ND	ND
	3rd	ND	1.49×10^{-6}	0.1	ND	ND
	4th	ND	1.49×10^{-6}	0.1	ND	ND
P209089/P207789	1st	0.023	1.49×10^{-6}	0.1	3.43×10^{-7}	0.36
	2nd	0.021	1.49×10^{-6}	0.1	3.12×10^{-7}	0.32
	3rd	0.022	1.49×10^{-6}	0.1	3.28×10^{-7}	0.33
	4th	0.021	1.49×10^{-6}	0.1	3.12×10^{-7}	0.32
Downgradient Velocities						
Alluvium						
B208789/1786	1st	0.047	1.30×10^{-5}	0.1	6.11×10^{-6}	6.32
	2nd	0.053	1.30×10^{-5}	0.1	6.88×10^{-6}	7.12
	3rd	0.051	1.30×10^{-5}	0.1	6.64×10^{-6}	6.87
	4th	0.048	1.30×10^{-5}	0.1	6.23×10^{-6}	6.45
1786/1386	1st	0.031	1.30×10^{-5}	0.1	4.03×10^{-6}	4.17
	2nd	0.032	1.30×10^{-5}	0.1	4.16×10^{-6}	4.30
	3rd	0.033	1.30×10^{-5}	0.1	4.28×10^{-6}	4.43
	4th	0.034	1.30×10^{-5}	0.1	4.41×10^{-6}	4.56

Table 3-3 (Page 2 of 4)
Average Linear Flow Velocities at or Near the Solar Evaporation Ponds

Well Pair	Quarter	dh/dl[a]	K (in cm/sec)[b]	n[c]	v (in cm/sec)[a,d]	v (in ft/yr)[a,d]
Downgradient Velocities (Continued)						
Alluvium (Continued)						
P207889/P218389	1st	0.038	1.30×10^{-5}	0.1	4.93×10^{-6}	5.10
	2nd	0.043	1.30×10^{-5}	0.1	5.59×10^{-6}	5.78
	3rd	0.034	1.30×10^{-5}	0.1	4.41×10^{-6}	4.56
	4th	0.030	1.30×10^{-5}	0.1	3.91×10^{-6}	4.05
05193/P219489	1st	0.050	1.30×10^{-5}	0.1	6.51×10^{-6}	6.74
	2nd	0.054	1.30×10^{-5}	0.1	7.01×10^{-6}	7.25
	3rd	0.054	1.30×10^{-5}	0.1	7.01×10^{-6}	7.25
	4th	0.048	1.30×10^{-5}	0.1	6.23×10^{-6}	6.45
P219489/3586	1st	0.056	1.30×10^{-5}	0.1	7.29×10^{-6}	7.54
	2nd	0.052	1.30×10^{-5}	0.1	6.76×10^{-6}	6.99
	3rd	0.053	1.30×10^{-5}	0.1	6.89×10^{-6}	7.13
	4th	0.054	1.30×10^{-5}	0.1	7.01×10^{-6}	7.25
P219489/2187	1st	0.037	1.30×10^{-5}	0.1	4.81×10^{-6}	4.98
	2nd	0.033	1.30×10^{-5}	0.1	4.28×10^{-6}	4.43
	3rd	0.033	1.30×10^{-5}	0.1	4.28×10^{-6}	4.43
	4th	0.034	1.30×10^{-5}	0.1	4.41×10^{-6}	4.56
P207689/2187	1st	0.061	1.30×10^{-5}	0.1	7.94×10^{-6}	8.22
	2nd	0.060	1.30×10^{-5}	0.1	7.79×10^{-6}	8.05
	3rd	0.058	1.30×10^{-5}	0.1	7.54×10^{-6}	7.80
	4th	0.059	1.30×10^{-5}	0.1	7.66×10^{-6}	7.93

Table 3-3 (Page 3 of 4)
Average Linear Flow Velocities at or Near the Solar Evaporation Ponds

Well Pair	Quarter	dh/dl[a]	K (in cm/sec)[b]	n[c]	v (in cm/sec)[a,d]	v (in ft/yr)[a,d]
Downgradient Velocities (Continued)						
Alluvium (Continued)						
P2486/3386	1st	ND	1.30×10^{-5}	0.1	ND	ND
	2nd	0.039	1.30×10^{-5}	0.1	5.06×10^{-6}	5.24
	3rd	ND	1.30×10^{-5}	0.1	ND	ND
	4th	ND	1.30×10^{-5}	0.1	ND	ND
Bedrock of the UHSU						
3086/B210389	1st	0.147	1.49×10^{-6}	0.1	2.18×10^{-6}	2.27
	2nd	0.146	1.49×10^{-6}	0.1	2.17×10^{-6}	2.26
	3rd	0.142	1.49×10^{-6}	0.1	2.11×10^{-6}	2.18
	4th	0.138	1.49×10^{-6}	0.1	2.05×10^{-6}	2.13
P209589/B208689	1st	0.118	1.49×10^{-6}	0.1	1.76×10^{-6}	1.82
	2nd	0.120	1.49×10^{-6}	0.1	1.79×10^{-6}	1.85
	3rd	0.126	1.49×10^{-6}	0.1	1.88×10^{-6}	1.94
	4th	0.115	1.49×10^{-6}	0.1	1.71×10^{-6}	1.78
P207989/76292	1st	0.018	1.49×10^{-6}	0.1	2.67×10^{-7}	0.27
	2nd	0.012	1.49×10^{-6}	0.1	1.79×10^{-7}	0.18
	3rd	0.007	1.49×10^{-6}	0.1	1.04×10^{-7}	0.10
	4th	0.014	1.49×10^{-6}	0.1	2.08×10^{-7}	0.22
76292/B208189	1st	0.061	1.49×10^{-6}	0.1	4.08×10^{-7}	0.94
	2nd	0.065	1.49×10^{-6}	0.1	9.69×10^{-7}	1.00
	3rd	0.048	1.49×10^{-6}	0.1	7.15×10^{-7}	0.74
	4th	0.063	1.49×10^{-6}	0.1	9.39×10^{-7}	0.97

Table 3-3 (Page 4 of 4)
Average Linear Flow Velocities at or Near the Solar Evaporation Ponds

Well Pair	Quarter	dh/dl[a]	K (in cm/sec)[b]	n[c]	v (in cm/sec)[a,d]	v (in ft/yr)[a,d]
Bedrock of the UHSU (Continued)						
B208189/B208289	1st	0.108	$1.49x10^{-6}$	0.1	$1.60x10^{-6}$	1.66
	2nd	0.109	$1.49x10^{-6}$	0.1	$1.62x10^{-6}$	1.68
	3rd	ND	$1.49x10^{-6}$	0.1	ND	ND
	4th	0.108	$1.49x10^{-6}$	0.1	$1.60x10^{-6}$	1.66
P207989/P209689	1st	0.043	$1.49x10^{-6}$	0.1	$6.41x10^{-7}$	0.66
	2nd	0.044	$1.49x10^{-6}$	0.1	$6.55x10^{-7}$	0.68
	3rd	0.042	$1.49x10^{-6}$	0.1	$6.26x10^{-7}$	0.65
	4th	0.042	$1.49x10^{-6}$	0.1	$6.26x10^{-7}$	0.65

[a] ND = no data, value cannot be calculated due to insufficient information

[b] K = the geometric mean of hydraulic conductivity values at Solar Evaporation Ponds (EG&G, 1993)

[c] n = assumed effective porosity (EG&G, 1993)

[d] v = Darcy velocity (average linear groundwater-flow velocity)

Table 3-4
Wells Used for Statistical Comparisons at the Solar Evaporation Ponds

Upgradient UHSU	Downgradient UHSU
2486	2686
P207389	3086
P209289	3887
P209389	P207589
05293	P207689
	P207789
	P207889
	P207989
	P208989
	P209489
	P209589
	P209689
	P209789
	05093
	05193
Upgradient UHSU Bedrock	**Downgradient UHSU Bedrock**
P207389	3086
P209389	P207589
	P207789
	P207989
	P208989
	P209489
	P209589
	P209689

Table 3-5 (Page 1 of 6)
Infrequently Detected Analytes (Less Than 50% Quantifiable Results)
in UHSU Groundwater at the Solar Evaporation Ponds

VOCs in UHSU Groundwater			
Well	**Date**	**Analyte**	**Result (µg/L)**
P209489	04/12/94	1,1,1-Trichloroethane	0.3
P209489	01/24/94	1,1-Dichloroethane	1
P209489	04/12/94	1,1-Dichloroethane	1
P209489	01/24/94	1,1-Dichloroethene	0.6
P209489	04/12/94	1,1-Dichloroethene	0.7
05093	07/26/94	bis(2-Ethylhexyl)phthlate	18
P209489	07/13/94	Carbon Tetrachloride	10.51
05093	03/15/94	Chloroform	0.2
05193	03/14/94	Chloroform	0.4
3086	02/02/94	Chloroform	0.2
3086	04/08/94	Chloroform	0.2
P207689	02/03/94	Chloroform	0.6
P207689	04/20/94	Chloroform	0.1
P207689	07/22/94	Chloroform	0.804
P208989	02/02/94	Chloroform	0.3
P208989	04/18/94	Chloroform	0.3
P209489	01/24/94	Chloroform	23
P209489	04/12/94	Chloroform	21
P209489	07/13/94	Chloroform	3.9
P209589	04/18/94	Chloroform	0.2
05093	03/15/94	cis-1,2-Dichloroethene	0.2

Table 3-5 (Page 2 of 6)
Infrequently Detected Analytes (Less Than 50% Quantifiable Results)
in UHSU Groundwater at the Solar Evaporation Ponds

VOCs in UHSU Groundwater (Continued)			
Well	**Date**	**Analyte**	**Result (µg/L)**
05193	03/14/94	cis-1,2-Dichloroethene	0.3
3086	02/02/94	cis-1,2-Dichloroethene	0.1
3086	04/08/94	cis-1,2-Dichloroethene	0.2
P209489	01/24/94	cis-1,2-Dichloroethene	12
P209489	04/12/94	cis-1,2-Dichloroethene	10
P209489	01/24/94	Methylene Chloride	0.4
P209489	04/12/94	Methylene Chloride	0.6
P209489	07/13/94	Methylene Chloride	2.5
05093	03/15/94	Tetrachloroethene	0.2
05193	03/14/94	Tetrachloroethene	15
05193	04/21/94	Tetrachloroethene	16
05193	07/15/94	Tetrachloroethene	14
3086	02/02/94	Tetrachloroethene	2
3086	04/08/94	Tetrachloroethene	2
3086	07/20/94	Tetrachloroethene	3
P207689	04/20/94	Tetrachloroethene	0.1
P207989	08/02/94	Tetrachloroethene	0.617
P208989	02/02/94	Tetrachloroethene	1
P208989	04/18/94	Tetrachloroethene	1
P209489	01/24/94	Tetrachloroethene	4
P209489	04/12/94	Tetrachloroethene	6

Infrequently Detected Analytes (Less Than 50% Quantifiable Results) in UHSU Groundwater at the Solar Evaporation Ponds

VOCs in UHSU Groundwater (Continued)			
Well	Date	Analyte	Result (µg/L)
P209789	01/31/94	Tetrachloroethene	3
P209789	04/26/94	Tetrachloroethene	0.6
P209789	07/29/94	Tetrachloroethene	1
05093	03/15/94	Trichloroethene	0.4
05193	03/14/94	Trichloroethene	19
05193	04/21/94	Trichloroethene	19
05193	07/15/94	Trichloroethene	22
2686	01/14/94	Trichloroethene	3
2686	04/08/94	Trichloroethene	5
2686	07/20/94	Trichloroethene	4.63
3086	02/02/94	Trichloroethene	0.7
3086	04/08/94	Trichloroethene	0.6
P207989	08/02/94	Trichloroethene	0.597
P208989	02/02/94	Trichloroethene	0.4
P208989	04/18/94	Trichloroethene	0.5
P209489	07/13/94	Trichloroethene	14.24
P209789	01/31/94	Trichloroethene	2
P209789	04/26/94	Trichloroethene	0.4
P209789	07/29/94	Trichloroethene	0.3

Table 3-5 (Page 4 of 6)
Infrequently Detected Analytes (Less Than 50% Quantifiable Results) in UHSU Groundwater at the Solar Evaporation Ponds

Dissolved Metals in UHSU Groundwater			
Well	Date	Analyte	Result ($\mu g/L$)
P207689	02/03/94	Aluminium	267
P207689	07/22/94	Antimony	59.6
05193	03/14/94	Arsenic	3.7
P208989	07/25/94	Beryllium	2.8
P209489	07/13/94	Cadmium	4.2
05093	04/21/94	Cesium	21
P208989	04/18/94	Cesium	14
P209789	10/12/94	Cesium	32
P208989	07/25/94	Chromium	27.8
05093	03/15/94	Cobalt	8.4
P208989	07/25/94	Cobalt	5.4
P207689	02/03/94	Copper	5.2
P207689	04/20/94	Copper	1.8
P207689	10/10/94	Copper	3.8
P207689	02/03/94	Manganese	1.8
P208989	04/18/94	Manganese	22.5
P209489	01/24/94	Manganese	51.8
05093	03/15/94	Mercury	0.39
P207689	07/22/94	Mercury	0.23
P209489	01/24/94	Mercury	0.24
P209489	07/13/94	Mercury	0.43

Infrequently Detected Analytes (Less Than 50% Quantifiable Results) in UHSU Groundwater at the Solar Evaporation Ponds

Dissolved Metals in UHSU Groundwater (Continued)			
Well	Date	Analyte	Result (µg/L)
05193	07/15/94	Molybdenum	44.1
05093	03/15/94	Nickel	45.5
05093	04/21/94	Nickel	17.2
05193	03/14/94	Nickel	14.6
05193	04/21/94	Nickel	29.3
3086	04/08/94	Nickel	24.1
P207689	10/10/94	Nickel	11.3
P208989	04/18/94	Nickel	43.8
P209489	01/24/94	Nickel	18.3
P208989	07/25/94	Silver	22.1
05193	03/14/94	Thallium	6.6
05093	03/15/94	Tin	66.7
05093	04/21/94	Tin	36.8
05193	03/14/94	Tin	56.4
05193	04/21/94	Tin	61.2
3086	02/02/94	Tin	41.4
P207689	10/10/94	Tin	65
P208989	02/02/94	Tin	27.4
P209489	01/24/94	Tin	32.2
P209789	01/31/94	Tin	38.9
P207689	02/03/94	Vanadium	6

Table 3-5 (Page 6 of 6)
Infrequently Detected Analytes (Less Than 50% Quantifiable Results)
in UHSU Groundwater at the Solar Evaporation Ponds

Dissolved Metals in UHSU Groundwater (Continued)			
Well	**Date**	**Analyte**	**Result (µg/L)**
P207689	04/20/94	Vanadium	5.9
P208989	07/25/94	Vanadium	314
P209789	07/29/94	Vanadium	4.6
P209789	07/29/94	Zinc	4.4
Inorganic Parameters			
05093	04/21/94	Cyanide	7.0E-03

Table 3-6 (Page 1 of 2)
Comparative Statistics for the Solar Evaporation Ponds - UHSU

Analyte	ANOVA Method	Probability Value	Compliance Well Significantly Different Than Background Wells	
Dissolved				
Barium	NP	0.0012	#	NA
Calcium	NP	0.0038	*	P208989
Lithium	NP	0.0003	*	05093, 05193, 3086, P208989
Magnesium	NP	0.0012	*	05093, 05193, 3086, P207689, P208989
Potassium	NP	0.0035	*	05093, 05193, P209489
Selenium	NP	0.0015	*	05193, P208989
Silicon	N	0.6975	**	NA
Sodium	NP	0.0013	*	05093, 05193, 3086, P208989
Strontium	NP	0.0025	*	05093, 05193, 3086, P207689, P208989
Gross Alpha	LN	0.0050	*	05193, 3086, P208989, 05093
Gross Beta	NP	0.0939	*	05093, 3086, P209489
Strontium 89, 90	N	0.6316	**	NA
Total Radio Cesium	NP	0.3696	**	NA
Uranium 233, 234	NP	0.0158	*	05193, 3086, P208989
Uranium 235	NP	0.0159	*	05093, 05193, 3086
Uranium 238	NP	0.0178	*	05193, 3086, P208989
Total				
Bicarbonate	NP	0.0024	*	05193, 2686
Carbonate	NP	0.1584	**	NA
Chloride	NP	0.0036	*	P209589, P207989
Nitrate/Nitrite	NP	0.0007	*	05093, 05193, 3086, P208989, P209489
Fluoride	NP	0.0009	*	05193, P207689, 2686, P207989

Table 3-6 (Page 2 of 2)
Comparative Statistics for the Solar Evaporation Ponds - UHSU

Analyte	ANOVA Method	Probability Value	Compliance Well Significantly Different Than Background Wells	
Total (Continued)				
Sulfate	NP	0.0011	*	2686, P207889, P207989, P209589
Total Dissolved Solids	NP	0.0005	*	05093, 05193, 3086, P208989, P209489, P209589
Total Suspended Solids	NP	0.0019	*	05093, 05193
Americium-241	NP	0.0492	*	05193
Plutonium-239/240	LN	0.2552	#	NA
Tritium	NP	0.0112	*	05193

N = Data were normally distributed and analyzed using parametric ANOVA methods.
LN = Data were transformed using natural logarithms prior to parametric ANOVA analysis.
NP = Data were analyzed using distribution-free nonparametric ANOVA methods.
# = Identifies a statistically significant difference between some locations. However, no statistical difference exists between the mean upgradient concentration and the concentration in compliance wells.
* = Indicates that the analyte concentrations in the downgradient wells are statistically greater than the mean upgradient concentration.
** = Indicates that no statistical difference exists between upgradient and downgradient analyte concentrations at the 0.05 significance level.
NA = Not applicable.

Table 3-7 (Page 1 of 2)
Comparative Statistics for the Solar Evaporation Ponds - UHSU Bedrock

Analyte	ANOVA Method[1]	Probability Value	Compliance Well Significantly Different Than Background Wells	
Dissolved				
Barium	NP	0.0083	#	NA
Calcium	NP	0.0138	*	3086, P208989
Lithium	NP	0.0138	*	3086, P208989
Magnesium	NP	0.0138	*	3086, P208989
Potassium	NP	0.0156	*	3086, P209489
Selenium	LN	0.0246	*	P208989
Silicon	LN	0.3420	**	NA
Strontium	NP	0.0138	*	P208989
Sodium	NP	0.0138	*	3086
Gross Alpha	NP	0.0259	*	3086, P208989
Gross Beta	NP	0.0297	*	3086, P209489
Strontium-89,90	NP	0.8954	**	NA
Uranium-233,234	NP	0.0259	*	3086
Uranium-238	NP	0.0259	*	3086
Bedrock				
Bicarbonate	NP	0.0564	#	NA
Chloride	NP	0.0371	*	P207989
Carbonate	NP	0.2474	**	NA
Fluoride	NP	0.0302	*	P207989
Nitrate/Nitrite	NP	0.0043	*	3086
Sulfate	NP	0.0286	•	P207989
Total Dissolved Solids	NP	0.0045	*	3086, P2098989

Table 3-7 (Page 2 of 2)
Comparative Statistics for the Solar Evaporation Ponds - UHSU Bedrock

Analyte	ANOVA Method[1]	Probability Value	Compliance Well Significantly Different Than Background Wells
Bedrock (Continued)			
Total Suspended Solids	NP	0.0255	* P209489
Tritium	LN	0.001	* 3086, P208989

N = Data were normally distributed and analyzed using parametric ANOVA methods.
LN = Data were transformed using natural logarithms prior to parametric ANOVA analysis.
NP = Data were analyzed using distribution-free nonparametric ANOVA methods.
# = Identifies a statistically significant difference between some locations. However, no statistical difference exists between the mean upgradient concentration and the concentration in compliance wells.
* = Indicates that the analyte concentrations in the downgradient wells are statistically greater than the mean upgradient concentration.
** = Indicates that no statistical difference exists between upgradient and downgradient analyte concentrations at the 0.05 significance level.
NA = Not applicable.

Table 4-1 (Page 1 of 3)
Groundwater-Monitoring Wells at or Near the West Spray Field

Well ID	Screened Lithology[a]	Hydrostratigraphic Unit[b]	Well Status[c]	Well Classification
4686	Kslt/Kcslt	B/L	Active	Special Purpose Well
4786	Qrf	A/U	Active	Special Purpose Well
4886	Ksslt/Kcslt	B/L	Active	RCRA Characterization Well
4986	Qrf	A/U	Active*	RCRA Regulatory Well
5086	Qrf	A/U	Active	RCRA Regulatory Well
5186	Qrf	A/U	Active	RCRA Regulatory Well
5286	Kss/Ksltclst	B/U	Active	RCRA Characterization Well
5686	Qc	A/U	Active	CERCLA Characterization Well
B110889	Qrf	A/U	Active	RCRA Regulatory Well
B110989	Qrf	A/U	Active	RCRA Regulatory Well
B111189	Qrf	A/U	Active	RCRA Regulatory Well
P114389	Qrf	A/U	Active	Special Purpose Well
P114489	Qrf	A/U	Active	Special Purpose Well
P114589	Qrf	A/U	Active	Special Purpose Well
P114989	Qrf	A/U	Active	Special Purpose Well
P115089	Qrf	A/U	Active	Special Purpose Well
B402689	Qrf	A/U	Active	Background Characterization Well
B410589	Qrf	A/U	Active	RCRA Regulatory Well
B410689	Qrf	A/U	Active	RCRA Regulatory Well
B410789	Qrf	A/U	Active	RCRA Regulatory Well
B411289	Qrf	A/U	Active	RCRA Regulatory Well
B411389	Qrf	A/U	Active	RCRA Regulatory Well
P415889	Qrf	A/U	Active	Special Purpose Well
P415989	Qrf	A/U	Active	Special Purpose Well
P416089	Qrf	A/U	Active	Special Purpose Well
P416189	Qrf	A/U	Active	Special Purpose Well
P416289	Qrf	A/U	Active	Special Purpose Well
P416389	Qrf	A/U	Active	Special Purpose Well

Table 4-1 (Page 2 of 3)
Groundwater-Monitoring Wells at or Near the West Spray Field

Well ID	Screened Lithology[a]	Hydrostratigraphic Unit[b]	Well Status[c]	Well Classification
P416489	Qrf	A/U	Active	Special Purpose Well
P416589	Qrf	A/U	Active	Special Purpose Well
P416989	Ksslt/Kslt	B/U	Active	Special Purpose Well
0190	Qrf	A/U	Active	Special Purpose Well
0390	Qrf	A/U	Active	Special Purpose Well
1490	Qrf	A/U	Active	Special Purpose Well
03092	Qrf	A/U	Active	Special Purpose Well
03192	Qrf	A/U	Active	Special Purpose Well
46192	Qrf	A/U	Active	RCRA Regulatory Well
46292	Qrf	A/U	Active	RCRA Regulatory Well
46392	Kclst	B/U	Active	RCRA Characterization Well
46492	Qrf	A/U	Active	CERCLA Regulatory Well
11394	Qrf	A/U	Active	Special Purpose Well
50194	Qrf	A/U	Active	CERCLA Characterization Well
50294	Qrf	A/U	Active	CERCLA Characterization Well
50394	Qrf	A/U	Active	CERCLA Characterization Well
50494	Qrf	A/U	Active	CERCLA Characterization Well
50694	Qrf	A/U	Active	CERCLA Characterization Well
50794	Qrf	A/U	Active	CERCLA Characterization Well
50894	Qrf	A/U	Active	CERCLA Characterization Well
50994	Qrf	A/U	Active	CERCLA Characterization Well
51094	Qrf	A/U	Active	CERCLA Characterization Well
51194	Qrf	A/U	Active	CERCLA Characterization Well
51294	Qrf	A/U	Active	CERCLA Characterization Well
51494	Qrf	A/U	Active	CERCLA Characterization Well
51594	Qrf	A/U	Active	CERCLA Characterization Well

Table 4-1 (Page 3 of 3)
Groundwater-Monitoring Wells at or Near the West Spray Field

Well ID	Screened Lithology[a]	Hydrostratigraphic Unit[b]	Well Status[c]	Well Classification
51694	Qrf	A/U	Active	CERCLA Characterization Well
51794	Qrf	A/U	Active	CERCLA Characterization Well

[a] From EG&G's database of well construction details

Qc	=	Quaternary colluvium
Qrf	=	Quaternary Rocky Flats Alluvium
Kslt	=	Cretaceous siltstone
Kcslt	=	Cretaceous clayey siltstone
Ksslt	=	Cretaceous sandy siltstone
Kss	=	Cretaceous sandstone
Ksltclst	=	Cretaceous silty claystone
Kclst	=	Cretaceous claystone

[b]

A/U	=	alluvium/upper hydrostratigraphic unit
B/U	=	bedrock/upper hydrostratigraphic unit
B/L	=	bedrock/lower hydrostratigraphic unit

[c]

Active	=	Well is currently being sampled.
Abandoned	=	Well was abandoned in 1993 and is no longer sampled.

Note: All other wells are within Spray Field boundary.

* Well was scheduled for abandonment in late 1994.

Table 4-2
1994 Vertical Hydraulic Gradients at the West Spray Field

Well Pair[a]	Quarter	Vertical Hydraulic Gradient (dh/dl)[b]	
5186/5286 (A/U to B/U)	1st	0.074	downward gradient
	2nd	0.134	downward gradient
	3rd	0.121	downward gradient
	4th	0.111	downward gradient
4986/4886 (A/U to B/L)	1st	0.100	downward gradient
	2nd	0.052	downward gradient
	3rd	0.058	downward gradient
	4th	0.063	downward gradient
51594/51494 (A/U to A/U)	1st	ND	
	2nd	ND	
	3rd	ND	
	4th	0.757	downward gradient

[a] A/U = alluvium/upper hydrostratigraphic unit
B/U = bedrock/upper hydrostratigraphic unit
B/L = bedrock/lower hydrostratigraphic unit

[b] ND = no data - value cannot be calculated due to insufficient data
dh/dl = hydraulic gradient

Table 4-3 (Page 1 of 2)
Average Linear Flow Velocities at or Near the West Spray Field

Well Pair	Quarter	dh/dl[a]	K (in cm/sec)[b]	n[c]	v (in cm/sec)[a,d]	v (in ft/yr)[a,d]
Alluvium						
5186/B110989	1st	0.014	$4.57x10^{-4}$	0.1	$6.40x10^{-5}$	66.20
	2nd	0.016	$4.57x10^{-4}$	0.1	$7.31x10^{-5}$	75.65
	3rd	0.015	$4.57x10^{-4}$	0.1	$6.86x10^{-5}$	70.92
	4th	0.015	$4.57x10^{-4}$	0.1	$6.86x10^{-5}$	70.92
5086/B410789	1st	0.013	$4.57x10^{-4}$	0.1	$5.94x10^{-5}$	61.47
	2nd	0.013	$4.57x10^{-4}$	0.1	$5.94x10^{-5}$	61.47
	3rd	0.012	$4.57x10^{-4}$	0.1	$5.48x10^{-5}$	56.74
	4th	0.012	$4.57x10^{-4}$	0.1	$5.48x10^{-5}$	56.74
Bedrock of the UHSU						
5286/46392	1st	0.011	$1.16x10^{-5}$	0.1	$1.28x10^{-6}$	1.32
	2nd	0.011	$1.16x10^{-5}$	0.1	$1.28x10^{-6}$	1.32
	3rd	0.010	$1.16x10^{-5}$	0.1	$1.16x10^{-6}$	1.20
	4th	0.011	$1.16x10^{-5}$	0.1	$1.28x10^{-6}$	1.32
Downgradient Velocities						
Alluvium						
B410689/P415889	1st	0.006	$4.57x10^{-4}$	0.1	$2.74x10^{-5}$	28.37
	2nd	0.005	$4.57x10^{-4}$	0.1	$2.29x10^{-5}$	23.64
	3rd	0.006	$4.57x10^{-4}$	0.1	$2.74x10^{-5}$	28.37
	4th	0.007	$4.57x10^{-4}$	0.1	$3.20x10^{-5}$	33.10

Table 4-3 (Page 2 of 2)
Average Linear Flow Velocities at or Near the West Spray Field

Well Pair	Quarter	dh/dl[a]	K (in cm/sec)[b]	n[c]	v (in cm/sec)[a,d]	v (in ft/yr)[a,d]
Downgradient Velocities (Continued)						
Alluvium (Continued)						
B110889/46492	1st	0.013	4.57×10^{-4}	0.1	5.94×10^{-5}	61.47
	2nd	0.011	4.57×10^{-4}	0.1	5.03×10^{-5}	52.01
	3rd	0.009	4.57×10^{-4}	0.1	4.11×10^{-5}	42.55
	4th	0.012	4.57×10^{-4}	0.1	5.48×10^{-5}	56.74
B410589/B402689	1st	ND	4.57×10^{-4}	0.1	ND	ND
	2nd	0.023	4.57×10^{-4}	0.1	1.05×10^{-4}	108.75
	3rd	0.028	4.57×10^{-4}	0.1	1.28×10^{-4}	132.39
	4th	0.027	4.57×10^{-4}	0.1	1.23×10^{-4}	127.66

[a] ND = no data, value cannot be calculated due to insufficient information

[b] K = the geometric mean of hydraulic conductivity values at the West Spray Field (EG&G, 1993)

[c] n = assumed effective porosity (EG&G, 1993)

[d] v = Darcy velocity (average linear groundwater-flow velocity)

Table 4-4
Wells Used for Statistical Comparisons at the West Spray Field

Upgradient UHSU	Downgradient UHSU
5186	B110889
46192	B110989
	B111189
	B410589
	B410689
	B410789
	5086
Upgradient UHSU Surficial Materials	**Downgradient UHSU Surficial Materials**
5186	B110889
46192	B110989
50294	B111189
	B410589
	B410689
	B410789
	5086

Table 4-5 (Page 1 of 4)
Infrequently Detected Analytes (Less Than 50% Quantifiable Results)
in UHSU Groundwater at the West Spray Field

VOCs in UHSU Groundwater			
Well	**Date**	**Analyte**	**Result (µg/L)**
B110989	04/15/94	Methylene Chloride	0.8
B410589	04/14/94	Methylene Chloride	0.7
B110989	04/15/94	Methylene Chloride	0.8
B410589	04/14/94	Methylene Chloride	0.7
B410789	02/10/94	Tetrachloroethene	0.1
B410789	02/10/94	Trichloroethene	0.1
Dissolved Metals in UHSU Groundwater			
B111189	01/25/94	Aluminum	16.5
B111189	07/29/94	Aluminum	35.9
B410689	04/15/94	Aluminum	16
B410689	10/10/94	Cesium	64
B410789	10/10/94	Cesium	68
B410589	04/14/94	Copper	1.4
5086	02/08/94	Iron	10.6
B110889	04/15/94	Iron	6
B110989	04/15/94	Iron	7.3
B111189	01/25/94	Iron	13
B111189	07/29/94	Iron	13.8
B111189	10/11/94	Iron	10
B410589	04/14/94	Iron	6.9
B410689	04/15/94	Iron	30.7
B110889	04/15/94	Lithium	4.1

Table 4-5 (Page 2 of 4)
Infrequently Detected Analytes (Less Than 50% Quantifiable Results) in UHSU Groundwater at the West Spray Field

Dissolved Metals in UHSU Groundwater (Continued)			
Well	**Date**	**Analyte**	**Result (µg/L)**
B110989	01/25/94	Lithium	2.6
B110989	04/15/94	Lithium	2.8
B111189	01/25/94	Lithium	1.9
B111189	07/29/94	Lithium	2.8
B410689	01/25/94	Lithium	2.5
B410689	04/15/94	Lithium	2.6
B410789	02/10/94	Lithium	4.8
B111189	07/29/94	Manganese	1.2
B410589	04/14/94	Manganese	3.1
B410589	10/11/94	Manganese	1.5
B111189	01/25/94	Selenium	1.6
5086	02/08/94	Tin	31.1
B110889	04/15/94	Vanadium	3
B410589	04/14/94	Vanadium	2.6
410689	04/15/94	Vanadium	2.1
5086	02/08/94	Zinc	3.4
B110989	01/25/94	Zinc	10.3
B111189	07/29/94	Zinc	6.6
B410789	02/10/94	Zinc	36.5
B410789	10/10/94	Zinc	3.2

Table 4-5 (Page 3 of 4)
Infrequently Detected Analytes (Less Than 50% Quantifiable Results)
in UHSU Groundwater at the West Spray Field

Dissolved Radionuclides in UHSU Groundwater			
Well	Date	Analyte	Result (µg/L)
5086	04/19/94	Total Radiocesium	0.9097
B110889	01/24/94	Total Radiocesium	1.595
B110889	04/15/94	Total Radiocesium	0.81
B111189	04/12/94	Total Radiocesium	0.8153
B410689	04/15/94	Total Radiocesium	0.83
B410789	04/19/94	Total Radiocesium	0.6769
5086	04/19/94	Uranium-235	0.4254
B110889	01/24/94	Uranium-235	0.053
B111189	04/12/94	Uranium-235	0.0814
B410789	02/10/94	Uranium-235	0.092
B410789	04/19/94	Uranium-235	0.1975
Total Radionuclides in UHSU Groundwater			
5086	04/19/94	Americium-241	0.0019
B110889	01/24/94	Americium-241	0.008
B110889	04/15/94	Americium-241	0.005
B111189	04/12/94	Americium-241	0.002
B410589	04/14/94	Americium-241	0.003
B410789	04/19/94	Americium-241	0.0016
B110889	01/24/94	Plutonium-239/240	0.001
B410789	04/19/94	Plutonium-239/240	0.0014
B110889	01/24/94	Tritium	75.86
B110989	04/15/94	Tritium	540

Table 4-5 (Page 4 of 4)
Infrequently Detected Analytes (Less Than 50% Quantifiable Results) in UHSU Groundwater at the West Spray Field

Total Radionuclides in UHSU Groundwater (Continued)			
Well	**Date**	**Analyte**	**Result (μg/L)**
B111189	04/12/94	Tritium	-47.28
B410689	01/25/94	Tritium	320
B410789	04/19/94	Tritium	30.43

Table 4-6
Comparative Statistics for the West Spray Field - UHSU

Analyte	ANOVA Method[1]	Probability Value	Compliance Well Significantly Different Than Background Wells	
Dissolved				
Barium	NP	0.0019	#	NA
Calcium	NP	0.0003	*	B410589, B410789
Magnesium	NP	0.0004	*	B410589, B410789
Silicon	N	0.9591	**	NA
Sodium	NP	0.0007	*	B110889, B110989, B111189
Strontium	NP	0.0004	*	B410589, B410789
Gross Alpha	LN	0.3497	**	NA
Gross Beta	NP	0.2963	**	NA
Strontium-89,90	NP	0.2757	**	NA
Uranium-233,234	N	0.0170	#	NA
Uranium-233,234	NP	0.2347	**	NA
Total				
Bicarbonate	NP	0.0047	*	B410689, B410789
Carbonate	NP	0.9557	**	NA
Chloride	LN	0.0000	*	B410689, B410789, 5086, B110989, B110889
Fluoride	NP	0.0481	#	NA
Nitrate/Nitrite	NP	0.4834	**	NA
Sulfate	NP	0.1916	**	NA
Total Dissolved Solid	NP	0.0321	*	B410789
Total Suspended Solids	NP	0.1251	**	NA

N = Data were normally distributed and analyzed using parametric ANOVA methods.
LN = Data were transformed using natural logarithms prior to parametric ANOVA analysis.
NP = Data were analyzed using distribution-free nonparametric ANOVA methods.
# = Identifies a statistically significant difference between some locations. However, no statistical difference exists between the mean upgradient concentration and the concentration in compliance wells.
* = Indicates that the analyte concentrations in the downgradient wells are statistically greater than the mean upgradient concentration.
** = Indicates that no statistical difference exists between upgradient and downgradient analyte concentrations at the 0.05 significance level.
NA = Not applicable.

Table 5-1 (Page 1 of 3)
Groundwater-Monitoring Wells at or Near the Present Landfill

Well ID	Screened Unit[a]	Hydrostratigraphic Unit[b]	Well Status[c]	Well Classification
0586	Qc	A/U	Active	CERCLA Characterization Well
0686	Qc	A/U	Active	Special Purpose Well
0786	Qc	A/U	Active	RCRA Regulatory Well
0886	Ksslt	B/L	Active	RCRA Regulatory Well
0986	Kss/Ksslt	B/L	Active	RCRA Characterization Well
1086	Qrf	A/U	Active	RCRA Regulatory Well
4087	Qc	A/U	Active	RCRA Regulatory Well
4187	Ksltss	B/L	Active	RCRA Characterization Well
4287	Qc	A/U	Active	CERCLA Characterization Well
5887	Qrf	A/U	Active	RCRA Regulatory Well
6087	Qrf	A/U	Active	RCRA Regulatory Well
6187	Qrf	A/U	Active	RCRA Regulatory Well
6287	Qaf	A/U	Active	RCRA Regulatory Well
6487	Qaf	A/U	Active	RCRA Regulatory Well
6587	Qaf/Kclst	A/U	Active	RCRA Regulatory Well
6687	Qrf	A/U	Active	RCRA Regulatory Well
6887	Qaf	A/U	Active	RCRA Regulatory Well
7087	Qrf	A/U	Active	RCRA Regulatory Well
7187	Qrf	A/U	Active	RCRA Regulatory Well
7287	Qrf	A/U	Active	RCRA Regulatory Well
B106089	Qaf	A/U	Active	RCRA Regulatory Well
B206289	Ksltclst/Kclst	B/U	Active	RCRA Regulatory Well
B206489	Qrf/Ksltclst	A/U	Active	RCRA Regulatory Well
B206589	Kclst	B/U	Active	RCRA Regulatory Well
B206689	Ksltclst	B/U	Active	RCRA Regulatory Well
B206789	Kclst	B/U	Active	RCRA Regulatory Well
B206889	Ksltclst	B/U	Active	RCRA Regulatory Well
B206989	Ksclst	B/U	Active	RCRA Regulatory Well

Table 5-1 (Page 2 of 3)
Groundwater-Monitoring Wells at or Near the Present Landfill

Well ID	Screened Unit[a]	Hydrostratigraphic Unit[b]	Well Status[c]	Well Classification
B207089	Ksclst/Ksltclst	B/U	Active	RCRA Regulatory Well
B207289	Ksltclst	B/U	Active	RCRA Regulatory Well
76792	Qc	A/U	Active	CERCLA Characterization Well
76992	Qrf	A/U	Active	CERCLA Characterization Well
77392	Qrf	A/U	Active	CERCLA Characterization Well
70093	Qrf	A/U	Active	CERCLA Characterization Well
70193	Kcslt/Kslt/Ksltss	B/U	Active	CERCLA Characterization Well
70293	Kss/Kslt/Ksslt	B/L	Active	CERCLA Characterization Well
70393	Qrf	A/U	Active	CERCLA Characterization Well
70493	Ksltclst/Kclst	B/U	Active	CERCLA Characterization Well
70593	Kslt	B/L	Active	CERCLA Characterization Well
70693	Qrf	A/U	Active	CERCLA Characterization Well
70893	Kslt/Kcslst	B/L	Active	CERCLA Characterization Well
71193	Qaf	A/U	Active	CERCLA Characterization Well
71493	Qaf	A/U	Active	CERCLA Characterization Well
71693	Qaf	A/U	Active	CERCLA Characterization Well
71893	Qaf	A/U	Active	CERCLA Characterization Well
72093	Qaf	A/U	Active	CERCLA Characterization Well
72293	Qaf	A/U	Active	CERCLA Characterization Well
72393	Qaf	A/U	Active	CERCLA Characterization Well
72493	Qaf	A/U	Active	CERCLA Characterization Well
52894	Qrf	A/U	Active	CERCLA Characterization Well
52994	Ksltclst	B/U	Active	CERCLA Characterization Well

Groundwater-Monitoring Wells at or Near the Present Landfill

Well ID	Screened Unit[a]	Hydrostratigraphic Unit[b]	Well Status[c]	Well Classification
53094	Kcslt/Ksltss	B/L	Active	CERCLA Characterization Well
53194	Qrf	A/U	Active	CERCLA Characterization Well

[a] From EG&G's database of well construction details

Qc	=	Quaternary colluvium
Qrf	=	Quaternary Rocky Flats Alluvium
Qaf	=	Quaternary artificial fill (including trash)
Ksslt	=	Cretaceous sandy siltstone
Kss	=	Cretaceous sandstone
Ksltss	=	Cretaceous silty sandstone
Kclst	=	Cretaceous claystone
Ksltclst	=	Cretaceous silty claystone
Ksclst	=	Cretaceous sandy claystone
Kslt	=	Cretaceous siltstone
Kcslt	=	Cretaceous clayey siltstone
Ksslt	=	Cretaceous sandy siltstone

[b]

A/U	=	alluvium/upper hydrostratigraphic unit
B/U	=	bedrock/upper hydrostratigraphic unit
B/L	=	bedrock/lower hydrostratigraphic unit

[c]

Active	=	Well is currently being sampled.
Abandoned	=	Well was abandoned in 1993 and is no longer sampled.

Table 5-2 (Page 1 of 2)
Vertical Hydraulic Gradients at the Present Landfill

Well Pair[a]	Quarter	Vertical Hydraulic Gradient[b] (dh/dl)	
70093/70193 (A/U to B/U)	1st	0.028	downward gradient
	2nd	0.041	downward gradient
	3rd	0.021	downward gradient
	4th	0.015	downward gradient
70193/70293 (B/U to B/L)	1st	0.124	downward gradient
	2nd	0.196	downward gradient
	3rd	0.172	downward gradient
	4th	0.167	downward gradient
70493/70593 (B/U to B/L)	1st	0.419	downward gradient
	2nd	0.478	downward gradient
	3rd	0.382	downward gradient
	4th	0.412	downward gradient
70693/70893 (A/U to B/L)	1st	0.835	downward gradient
	2nd	1.064	downward gradient
	3rd	0.769	downward gradient
	4th	0.888	downward gradient
72393/72093 (A/U to A/U)	1st	-0.022	upward gradient
	2nd	-0.022	upward gradient
	3rd	0.047	downward gradient
	4th	-0.030	upward gradient

Table 5-2 (Page 2 of 2)
Vertical Hydraulic Gradient at the Present Landfill

Well Pair[a]	Quarter	Vertical Hydraulic Gradient[b] (dh/dl)	
1086/0986 (A/U to B/L)	1st	0.167	downward gradient
	2nd	0.227	downward gradient
	3rd	0.194	downward gradient
	4th	0.180	downward gradient
0786/0886 (A/U to B/L)	1st	0.618	downward gradient
	2nd	0.704	downward gradient
	3rd	0.602	downward gradient
	4th	0.702	downward gradient
B206989/B207089 (B/U to B/U)	1st	0.072	downward gradient
	2nd	0.059	downward gradient
	3rd	0.080	downward gradient
	4th	0.108	downward gradient

[a] A/U = alluvium/upper hydrostratigraphic unit
B/U = bedrock/upper hydrostratigraphic unit
B/L = bedrock/lower hydrostratigraphic unit

[b] ND = no data - value cannot be calculated due to insufficient data
dh/dl = hydraulic gradient

Table 5-3 (Page 1 of 2)
Average Linear Flow Velocities at or Near the Present Landfill

Well Pair	Quarter	dh/dl[a]	K (in cm/sec)[b]	n[c]	v (in cm/sec)[a,d]	v (in ft/yr)[a,d]
Alluvium						
B106089/72393	1st	0.010	$1.10x10^{-4}$	0.1	$1.10x10^{-5}$	11.38
	2nd	0.008	$1.10x10^{-4}$	0.1	$8.80x10^{-6}$	9.10
	3rd	0.011	$1.10x10^{-4}$	0.1	$1.21x10^{-5}$	12.52
	4th	0.001	$1.10x10^{-4}$	0.1	$1.10x10^{-6}$	1.14
72393 / 72293	1st	0.034	$1.10x10^{-4}$	0.1	$3.74x10^{-5}$	38.70
	2nd	0.033	$1.10x10^{-4}$	0.1	$3.63x10^{-5}$	37.56
	3rd	0.034	$1.10x10^{-4}$	0.1	$3.74x10^{-5}$	38.70
	4th	0.043	$1.10x10^{-4}$	0.1	$4.73x10^{-5}$	48.94
72293/0786	1st	0.128	$1.10x10^{-4}$	0.1	$1.41x10^{-4}$	145.68
	2nd	0.126	$1.10x10^{-4}$	0.1	$1.39x10^{-4}$	143.40
	3rd	0.132	$1.10x10^{-4}$	0.1	$1.45x10^{-4}$	150.23
	4th	0.139	$1.10x10^{-4}$	0.1	$1.53x10^{-4}$	158.20
Bedrock of the UHSU						
70493/B206789	1st	0.036	$5.33x10^{-7}$	0.1	$1.92x10^{-7}$	0.20
	2nd	0.036	$5.33x10^{-7}$	0.1	$1.92x10^{-7}$	0.20
	3rd	0.039	$5.33x10^{-7}$	0.1	$2.08x10^{-7}$	0.22
	4th	0.040	$5.33x10^{-7}$	0.1	$2.13x10^{-7}$	0.22

Table 5-3 (Page 2 of 2)
Average Linear Flow Velocities at or Near the Present Landfill

Well Pair	Quarter	dh/dl[a]	K (in cm/sec)[b]	n[c]	v (in cm/sec)[a,d]	v (in ft/yr)[a,d]
Downgradient Velocities						
Bedrock of the UHSU						
B206789/B206989	1st	0.072	5.33×10^{-7}	0.1	3.84×10^{-7}	0.40
	2nd	0.074	5.33×10^{-7}	0.1	3.94×10^{-7}	0.41
	3rd	0.069	5.33×10^{-7}	0.1	3.68×10^{-7}	0.38
	4th	0.066	5.33×10^{-7}	0.1	3.52×10^{-7}	0.36
B206989/4287	1st	0.015	5.33×10^{-7}	0.1	8.00×10^{-8}	0.08
	2nd	0.013	5.33×10^{-7}	0.1	6.93×10^{-8}	0.07
	3rd	ND	5.33×10^{-7}	0.1	ND	ND
	4th	ND	5.33×10^{-7}	0.1	ND	ND

[a] ND = no data, value cannot be calculated due to insufficient information.

[b] Geometric mean of hydraulic conductivity values measured at the Present Landfill (preliminary results of OU7 RFI/RI)

[c] n = assumed effective porosity (EG&G, 1993)

[d] v = Darcy velocity (average linear groundwater-flow velocity)

Table 5-4
Wells Used for Statistical Comparisons at the Present Landfill

Upgradient UHSU	Downgradient UHSU
1086	4087
5887	B206989
70093	B207089
70193	
70393	
70493	
70693	
Upgradient UHSU Bedrock	**Downgradient UHSU Bedrock**
70193	B206989
70493	B207089

Table 5-5
Infrequently Detected Analytes (Less Than 50% Quantifiable Results) in UHSU Groundwater at the Present Landfill

Dissolved Metals in UHSU Groundwater			
Well	Date	Analyte	Result ($\mu g/L$)
B207089	04/07/94	Antimony	43.3
B207089	08/04/94	Beryllium	0.48
B207089	04/07/94	Cadmium	4.1
B207089	10/12/94	Cesium	43
B207089	08/04/94	Copper	14.4
B207089	01/27/94	Selenium	2.9
B207089	04/07/94	Silver	8.6
B207089	10/12/94	Tin	59.9
B207089	08/04/94	Vanadium	25.3
B207089	08/04/94	Zinc	5.4
B207089	10/12/94	Zinc	12.4
Dissolved Radionuclides in UHSU Groundwater (pCi/L)			
B207089	04/07/94	Uranium-235	0.2949
Inorganic Parameters in UHSU Groundwater ($\mu g/L$)			
B207089	04/07/94	Carbonate (as CaCO3)	1,500

Table 5-6 (Page 1 of 2)
Comparative Statistics for the Present Landfill - UHSU

Analyte	ANOVA Method[1]	Probability Value	Compliance Well Significantly Different Than Background Wells	
Dissolved				
Barium	NP	0.0023	##	NA
Calcium	NP	0.0076	*	B207089
Lithium	NP	0.0076	*	B207089
Magnesium	NP	0.0077	*	B207089
Manganese	NP	0.7667	**	NA
Silicon	NP	0.0206	##	NA
Sodium	NP	0.0076	*	B207089
Strontium	NP	0.0076	*	B207089
Gross Alpha	NP	1.0000	**	NA
Gross Beta	NP	0.2958	**	NA
Strontium-89,90	NP	0.5850	**	NA
Total Radio Cessium	NP	0.3605	**	NA
Uranium-233,234	NP	0.0380	*	B207089
Uranium 235	NP	0.0932	**	NA
Uranium 238	NP	0.0471	*	B207089
Total				
Bicarbonate	NP	0.0063	*	B207089
Chloride	NP	0.0063	*	B207089
Nitrate/Nitrite	NP	0.2752	**	NA
Fluoride	NP	0.0487	*	B207089
Sulfate	NP	0.0064	*	B207089
Total Dissolved Solids	NP	0.0063	*	B207089
Total Organic Carbon	NP	0.1317	**	NA
Total Suspended Solids	NP	0.0128	##	NA
Americum-241	NP	0.7503	**	NA

Comparative Statistics for the Present Landfill - UHSU

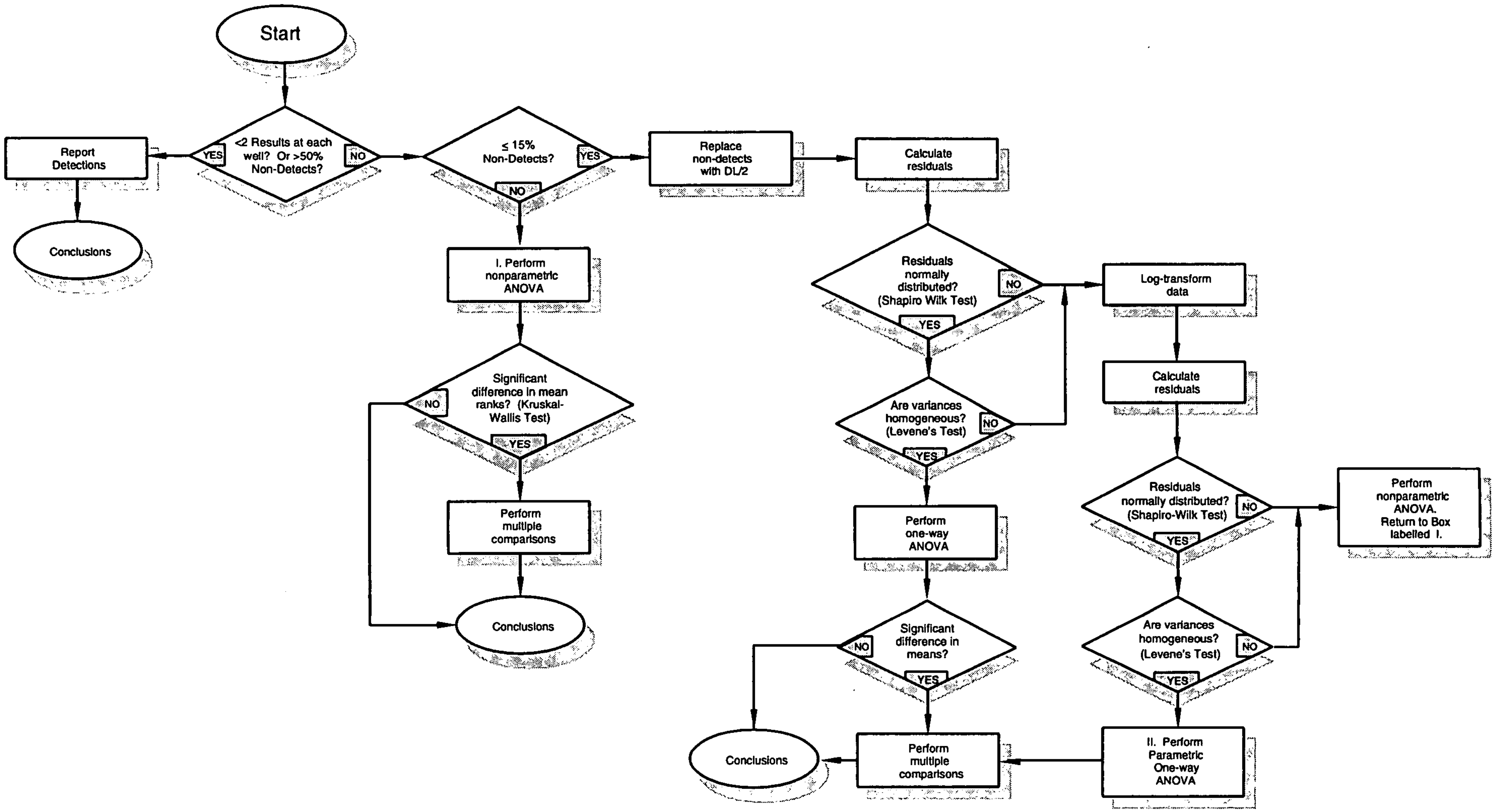
Analyte	ANOVA Method[1]	Probability Value	Compliance Well Significantly Different Than Background Wells
Total (Continued)			
Plutonium-239/240	NP	0.3845	** NA
Tritium	NP	0.3009	** NA

N = Data were normally distributed and analyzed using parametric ANOVA methods.
LN = Data were transformed using natural logarithms prior to parametric ANOVA analysis.
NP = Data were analyzed using distribution-free nonparametric ANOVA methods.
# = Identifies a statistically significant difference between some locations. However, no statistical difference exists between the mean upgradient concentration and the concentration in compliance wells.
* = Indicates that the analyte concentrations in the downgradient wells are statistically greater than the mean upgradient concentration.
** = Indicates that no statistical difference exists between upgradient and downgradient analyte concentrations at the 0.05 significance level.
NA = Not applicable.

Table 5-7
Comparitive Statistics for the Present Landfill - UHSU Bedrock

Analyte	ANOVA Method[1]	Probability Value	Compliance Well Significantly Different Than Background Wells	
Dissolved				
Barium	NP	0.0143	##	NA
Calcium	NP	0.0323	*	B207089
Lithium	NP	0.0323	*	B207089
Magnesium	NP	0.0339	*	B207089
Manganese	NP	1.0000	**	NA
Silicon	NP	0.2888	**	NA
Sodium	NP	0.0339	*	B207089
Strontium	NP	0.0339	*	B207089
Gross Alpha	NP	1.0000	**	NA
Gross Beta	NP	0.5050	**	NA
Strontium-89,90	NP	0.4386	**	NA
Total Radio Cesium	NP	0.6985	**	NA
Uranium-233,234	NP	0.1824	**	NA
Uranium-235	NP	0.3173	**	NA
Total				
Bicarbonate	NP	0.0196	•	B207089
Chloride	NP	0.0196	*	B207089
Chemical Oxygen Demand	NP	0.4268	**	NA
Fluoride	NP	0.7928	**	NA
Sulfate	NP	0.0201	•	B207089
Total Dissolved Solids	NP	0.0196	*	B207089
Total Oxygen Demand	NP	0.1198	**	NA
Total Suspended Solids	NP	0.0201	##	NA
Americum-241	NP	1.0	**	NA
Plutonium-239/240	NP	0.4344	**	NA
Tritium	NP	1.0	**	NA

N = Data were normally distributed and analyzed using parametric ANOVA methods.
LN = Data were transformed using natural logarithms prior to parametric ANOVA analysis.
NP = Data were analyzed using distribution-free nonparametric ANOVA methods.
# = Identifies a statistically significant difference between some locations. However, no statistical difference exists between the mean upgradient concentration and the concentration in compliance wells.
* = Indicates that the analyte concentrations in the downgradient wells are statistically greater than the mean upgradient concentration.
** = Indicates that no statistical difference exists between upgradient and downgradient analyte concentrations at the 0.05 significance level.
NA = Not applicable.



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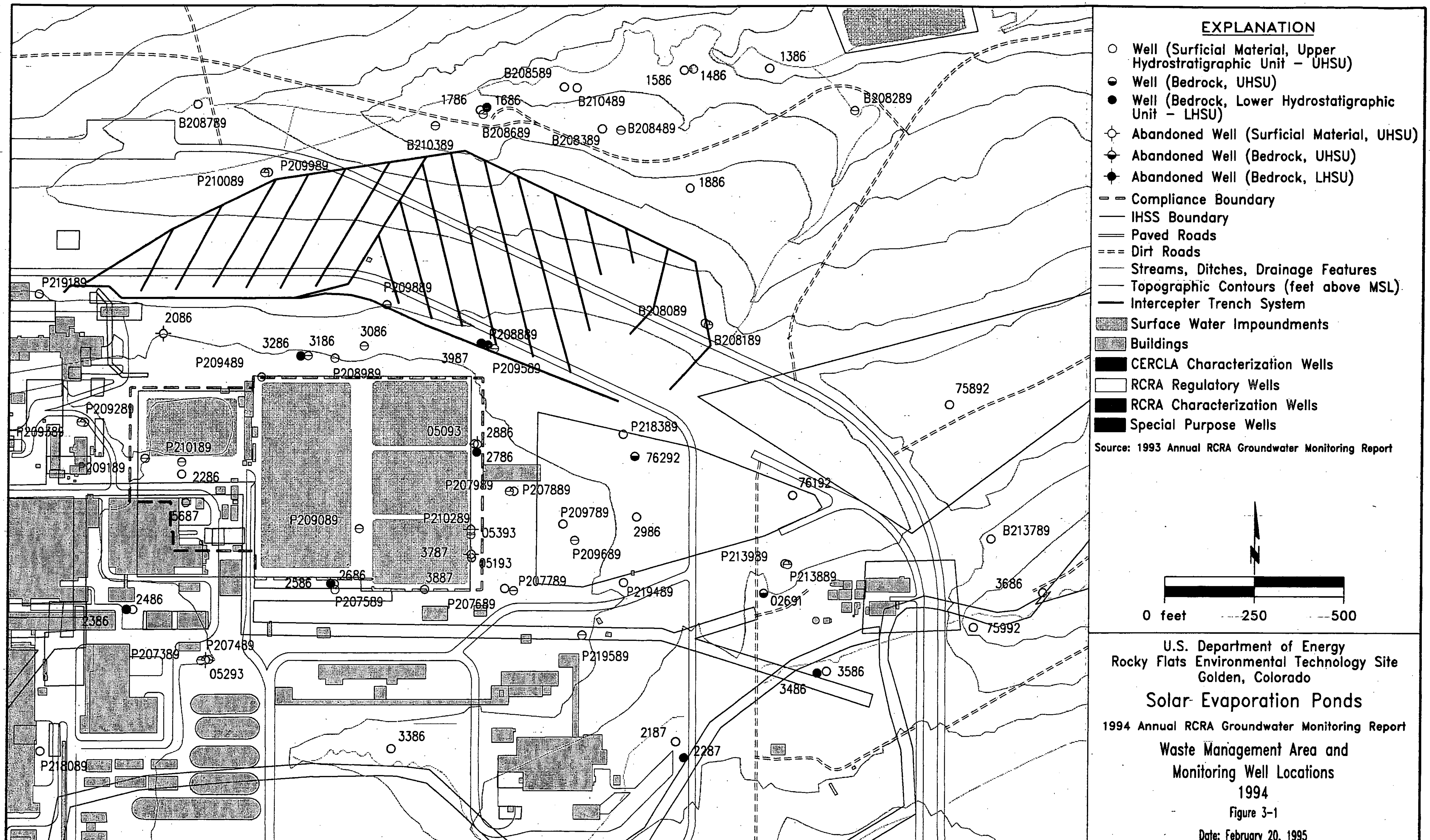
Rocky Flats Environmental Technology Site, Golden, Colorado
1994 Annual RCRA Groundwater Monitoring Report

Method for Performing Statistical Evaluations

Figure 1-1


EXPLANATION
Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
Well (Bedrock, UHSU)
Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
Abandoned Well (Surficial Material, UHSU)
Abandoned Well (Bedrock, UHSU)
Abandoned Well (Bedrock, LHSU)
Compliance Boundary
IHSS Boundary
Paved Roads
Dirt Roads
Streams, Ditches, Drainage Features
Topographic Contours (feet above MSL)
Intercepter Trench System
Surface Water Impoundments
Buildings
CERCLA Characterization Wells
RCRA Regulatory Wells
RCRA Characterization Wells
Special Purpose Wells
Source: 1993 Annual RCRA Groundwater Monitoring Report
N
0 feet
250
500
U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado
Solar Evaporation Ponds
1994 Annual RCRA Groundwater Monitoring Report
Waste Management Area and
Monitoring Well Locations
1994
Figure 3-1
Date: February 20, 1995
B208589
1586
1486
1386
1786
1686
B210489
B208289
B208789
B208689
B208389
B208489
B210389
P209989
P210089
1886
P219189
P209889
B208089
2086
3286
3186
3086
P208889
B208189
P209489
3987
P209589
P208989
75892
P209289
05093
2886
P218389
P209389
P210189
2786
76292
P209189
2286
P207989
P207889
76192
5687
P209089
P210289
P209789
2986
05393
3787
P209689
B213789
05193
P213989
3887
P207789
P213889
3686
2586
2686
P219489
02691
2486
P207589
P207689
75992
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3486
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2187
2287
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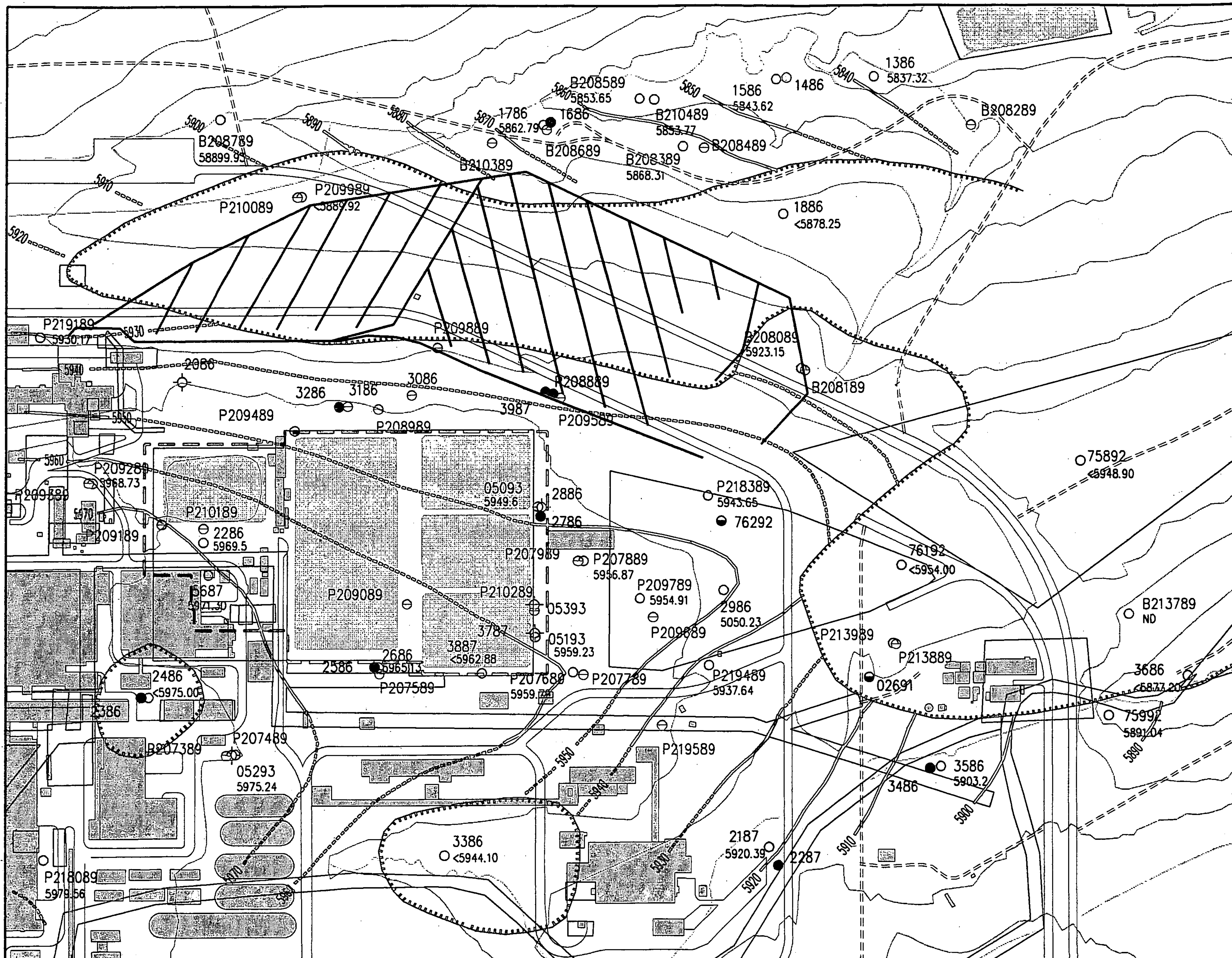
94 RCRA-A 3-1



EXPLANATION

- ○ Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- ◒ Well (Bedrock, UHSU)
- ● Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Intercepter Trench System
- Groundwater Potentiometric Contours (feet above MSL); Dashed Where Approximately Located
- Areas of Unsaturated Surficial Materials
- ND No Data
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Source: 1993 Annual RCRA Groundwater Monitoring Report

N

0 feet 250 500

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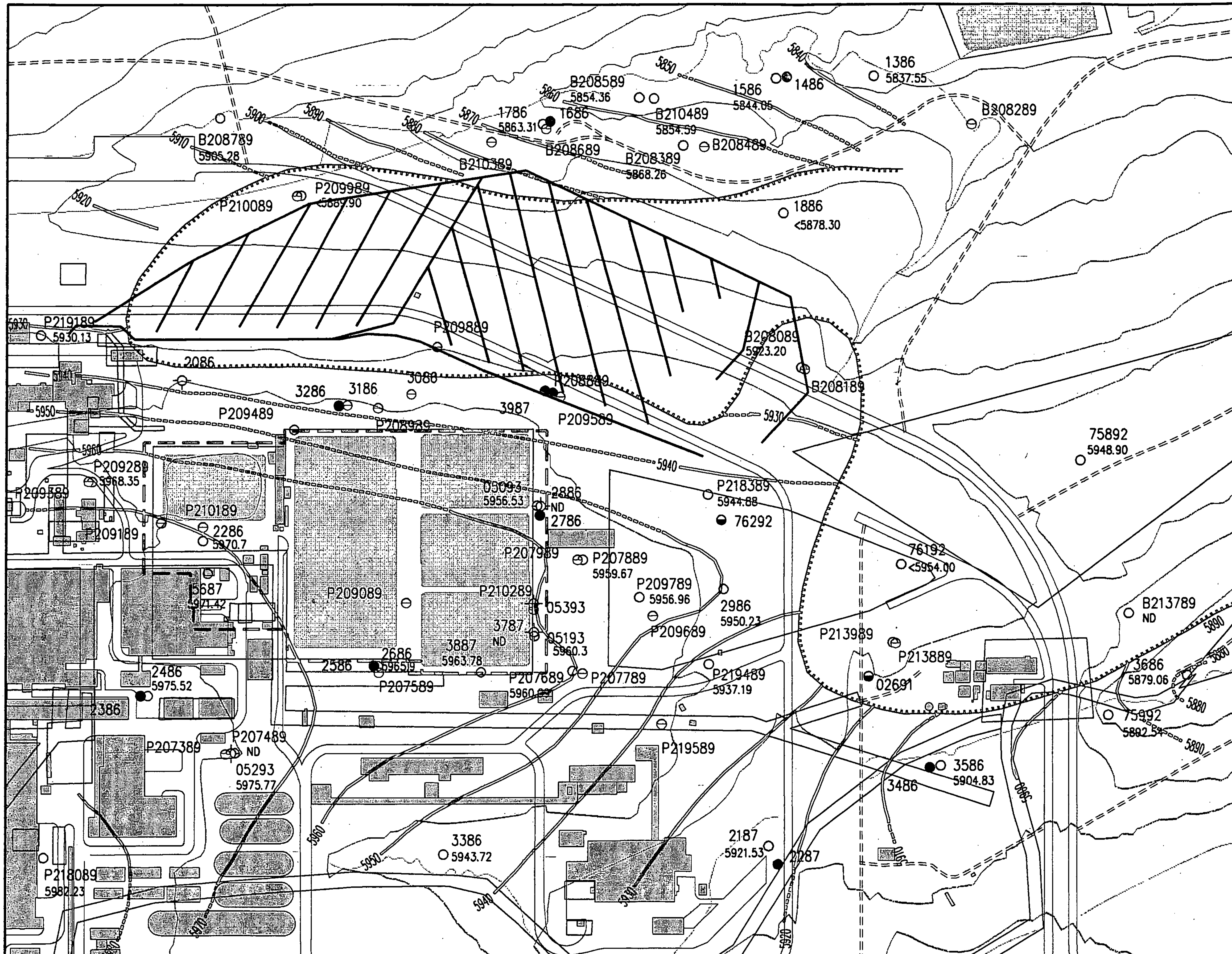
1994 Annual RCRA Groundwater Monitoring Report

Groundwater Potentiometric – Surface Map
UHSU Surficial Materials
First Quarter (January) 1994

Figure 3-2
Date: February 20, 1995

94 RCRA-A 3-2



EXPLANATION

- ○ Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- ◒ Well (Bedrock, UHSU)
- ● Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
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- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Intercepter Trench System
- Groundwater Potentiometric Contours (feet above MSL); Dashed Where Approximately Located
- Areas of Unsaturated Surficial Materials
- ND No Data
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Source: 1993 Annual RCRA Groundwater Monitoring Report

N

0 feet 250 500

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Golden, Colorado

Solar Evaporation Ponds

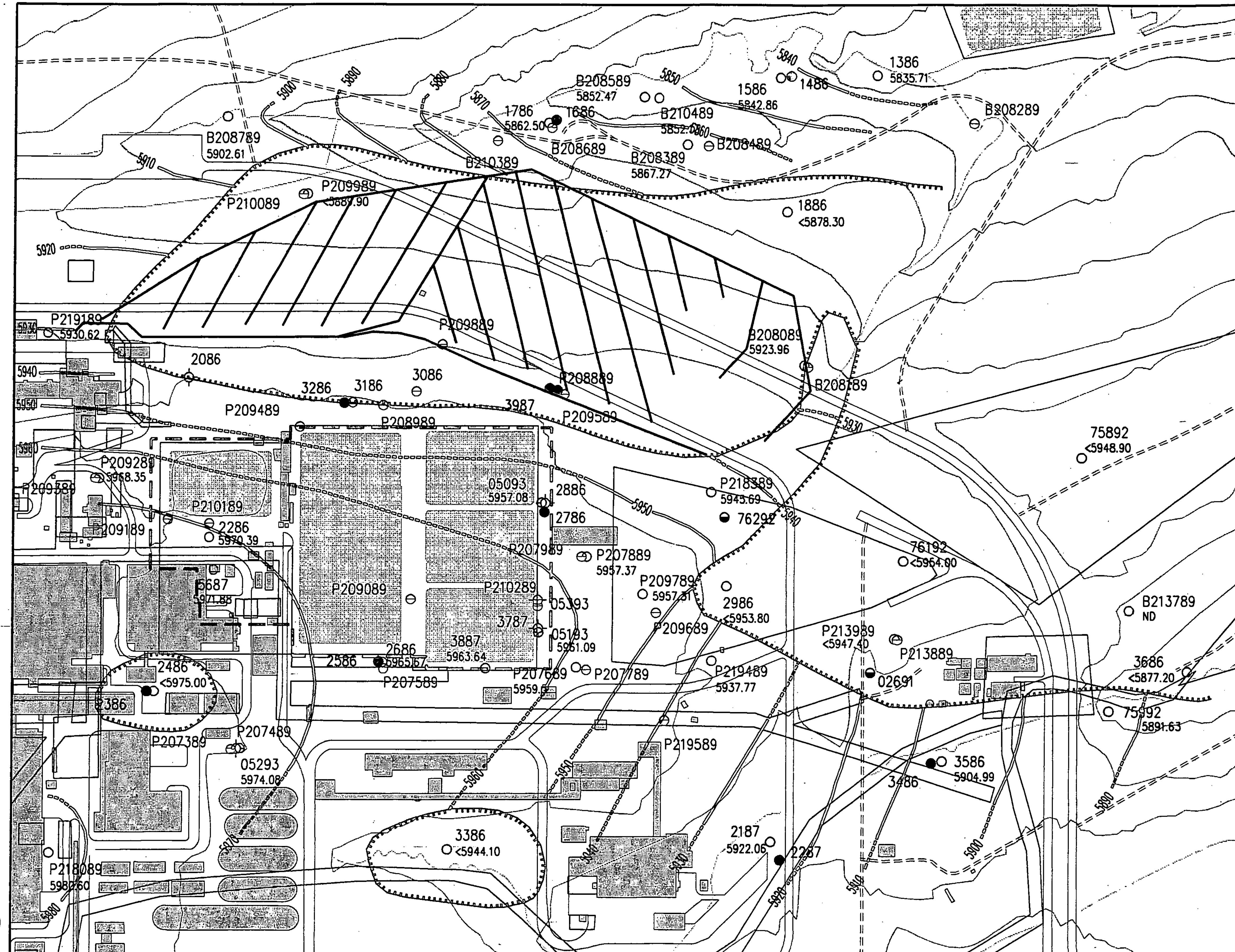
1994 Annual RCRA Groundwater Monitoring Report

Groundwater Potentiometric-Surface Map
UHSU Surficial Materials
Second Quarter (April) 1994

Figure 3-3

Date: February 20, 1995

94 RCRA-A 3-3



EXPLANATION

- ○ Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- ● Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Intercepter Trench System
- Groundwater Potentiometric Contours (feet above MSL); Dashed Where Approximately Located
- Areas of Unsaturated Surficial Materials
- ND No Data
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Source: 1993 Annual RCRA Groundwater Monitoring Report

0 feet 250 500

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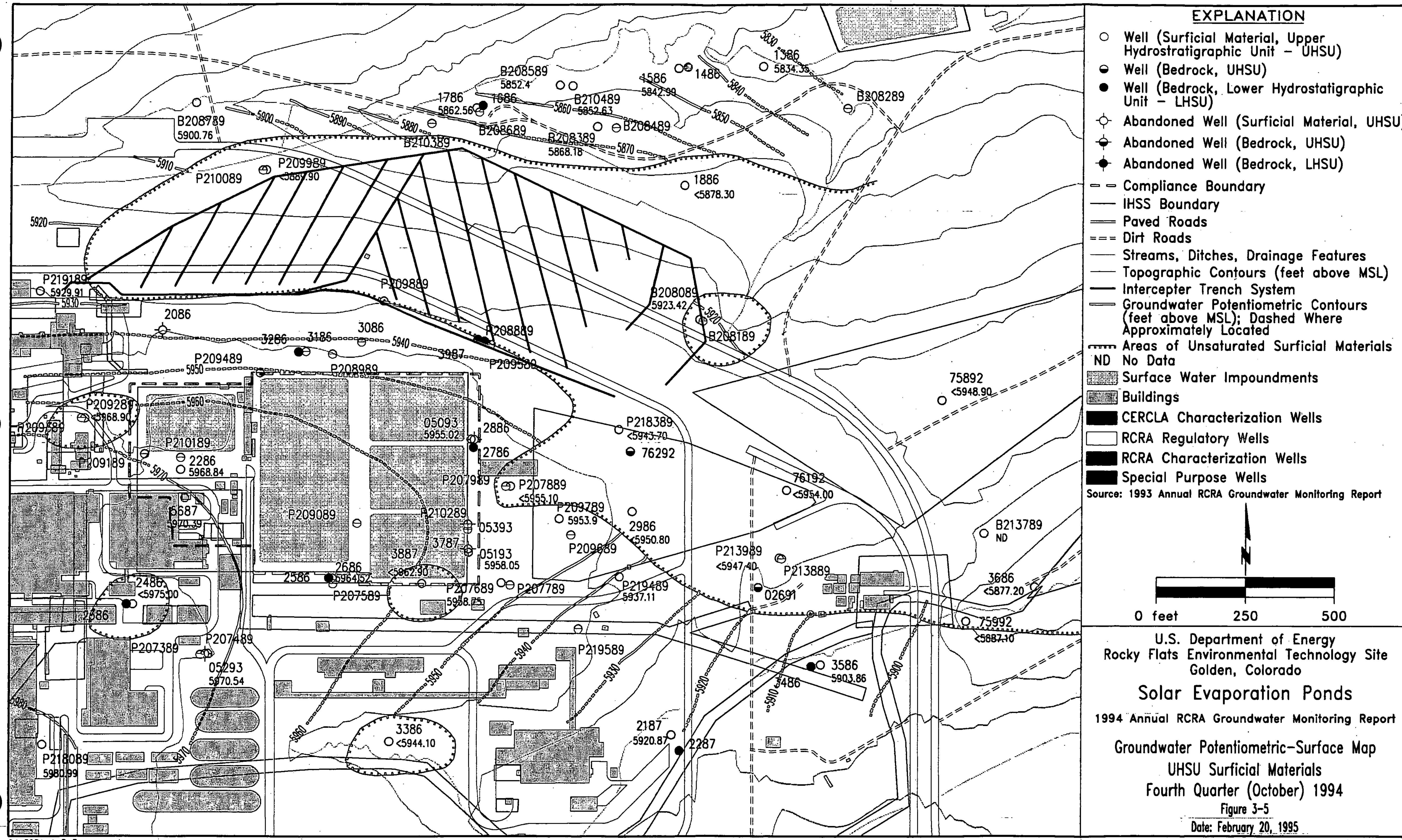
Rocky Flats Environmental Technology Site
Golden, Colorado

Solar Evaporation Ponds

1994 Annual RCRA Groundwater Monitoring Report

Groundwater Potentiometric-Surface Map UHSU Surficial Materials Third Quarter (July) 1994

Figure 3-4
Date: February 20, 1995



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Rocky Flats Environmental Technology Site
Golden, Colorado

Solar Evaporation Ponds

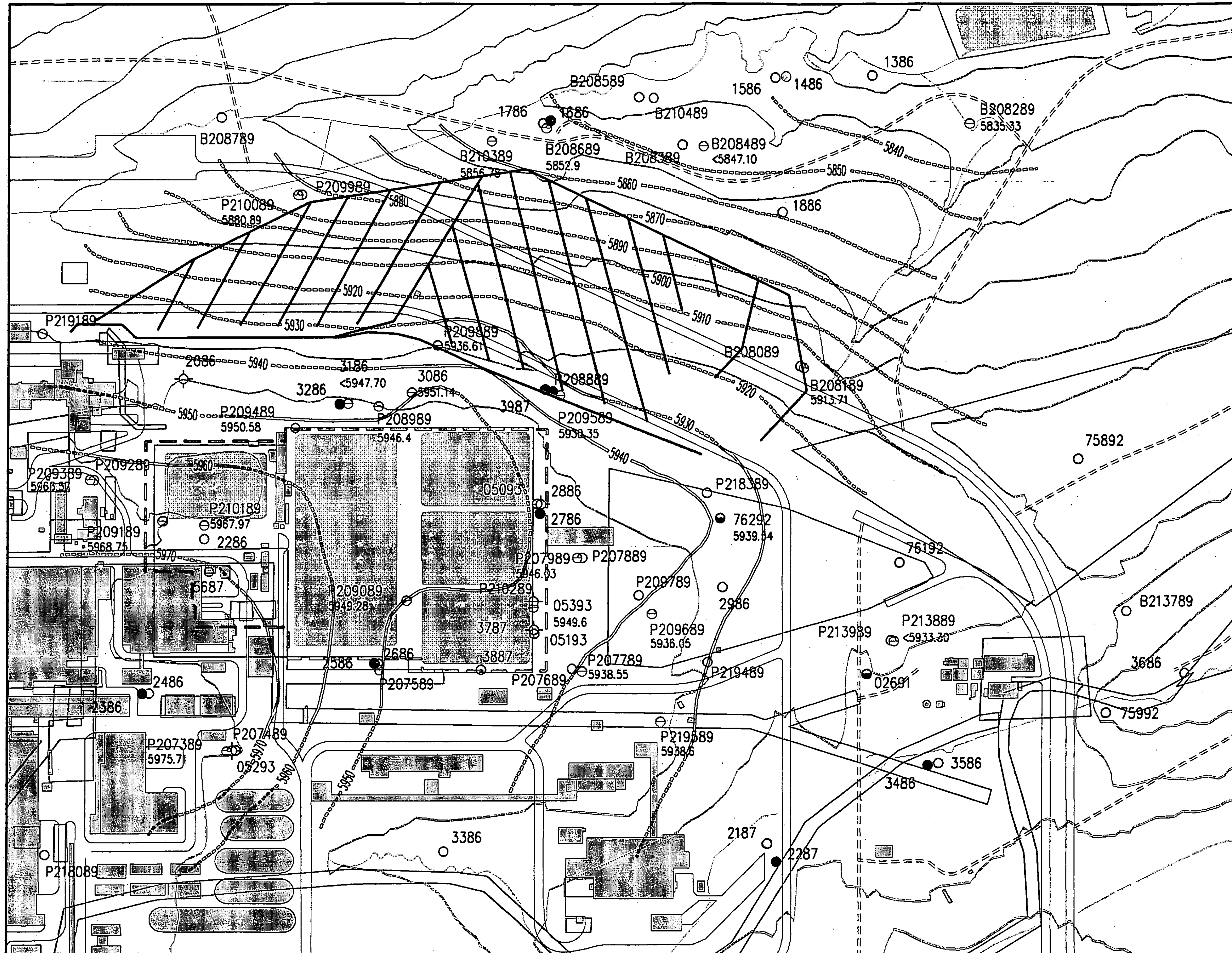
1994 Annual RCRA Groundwater Monitoring Report

Groundwater Potentiometric-Surface Map
UHSU Surficial Materials
Fourth Quarter (October) 1994

Figure 3-5

Date: February 20, 1995

94 RCRA-A 3-5



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Solar Evaporation Ponds

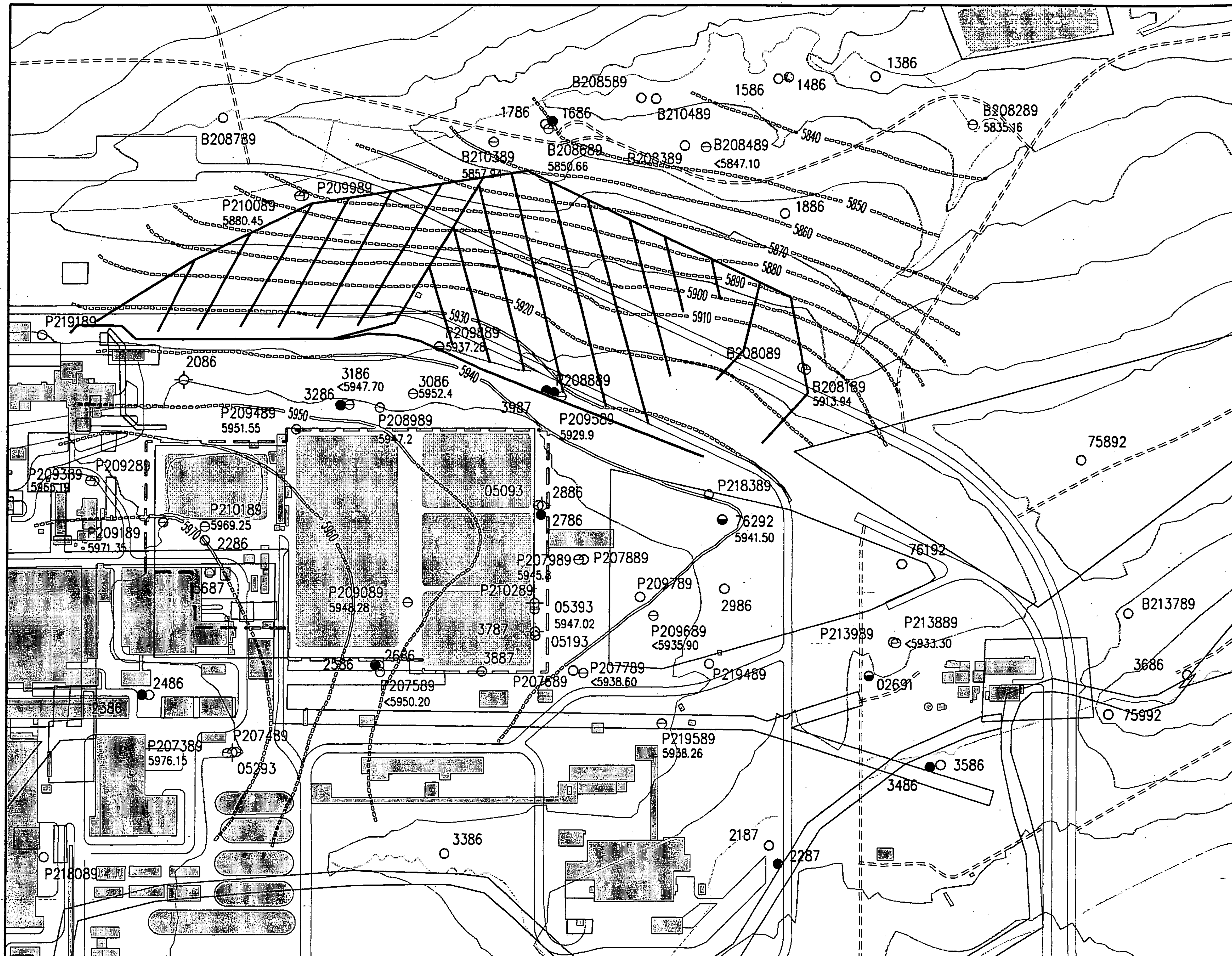
1994 Annual RCRA Groundwater Monitoring Report

Groundwater Potentiometric-Surface Map
UHSU Bedrock
First Quarter (January) 1994

Figure 3-6

Date: February 20, 1995

94 RCRA-A 3-6



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Intercepter Trench System
- Groundwater Potentiometric Contours (feet above MSL); Dashed Where Approximately Located
- ND No Data
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Source: 1993 Annual RCRA Groundwater Monitoring Report

N

0 feet 250 500

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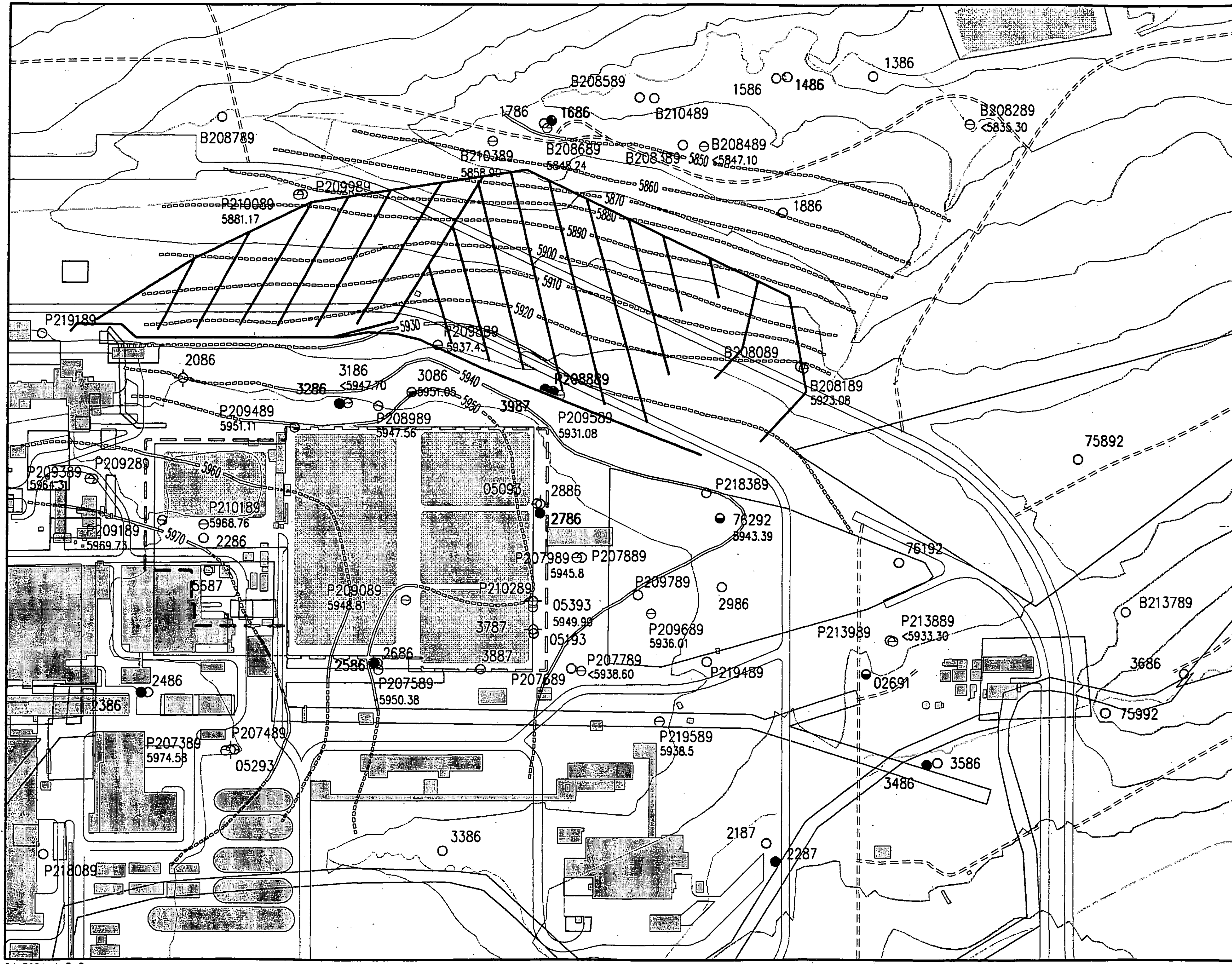
Golden, Colorado

Solar Evaporation Ponds

1994 Annual RCRA Groundwater Monitoring Report

Groundwater Potentiometric-Surface Map
UHSU Bedrock
Second Quarter (April) 1994
Figure 3-7
Date: February 20, 1995

94 RCRA-A 3-7



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Intercepter Trench System
- Groundwater Potentiometric Contours (feet above MSL); Dashed Where Approximately Located
- ND No Data
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- **RCRA Characterization Wells**
- Special Purpose Wells

Source: 1993 Annual RCRA Groundwater Monitoring Report

N

0 feet 250 500

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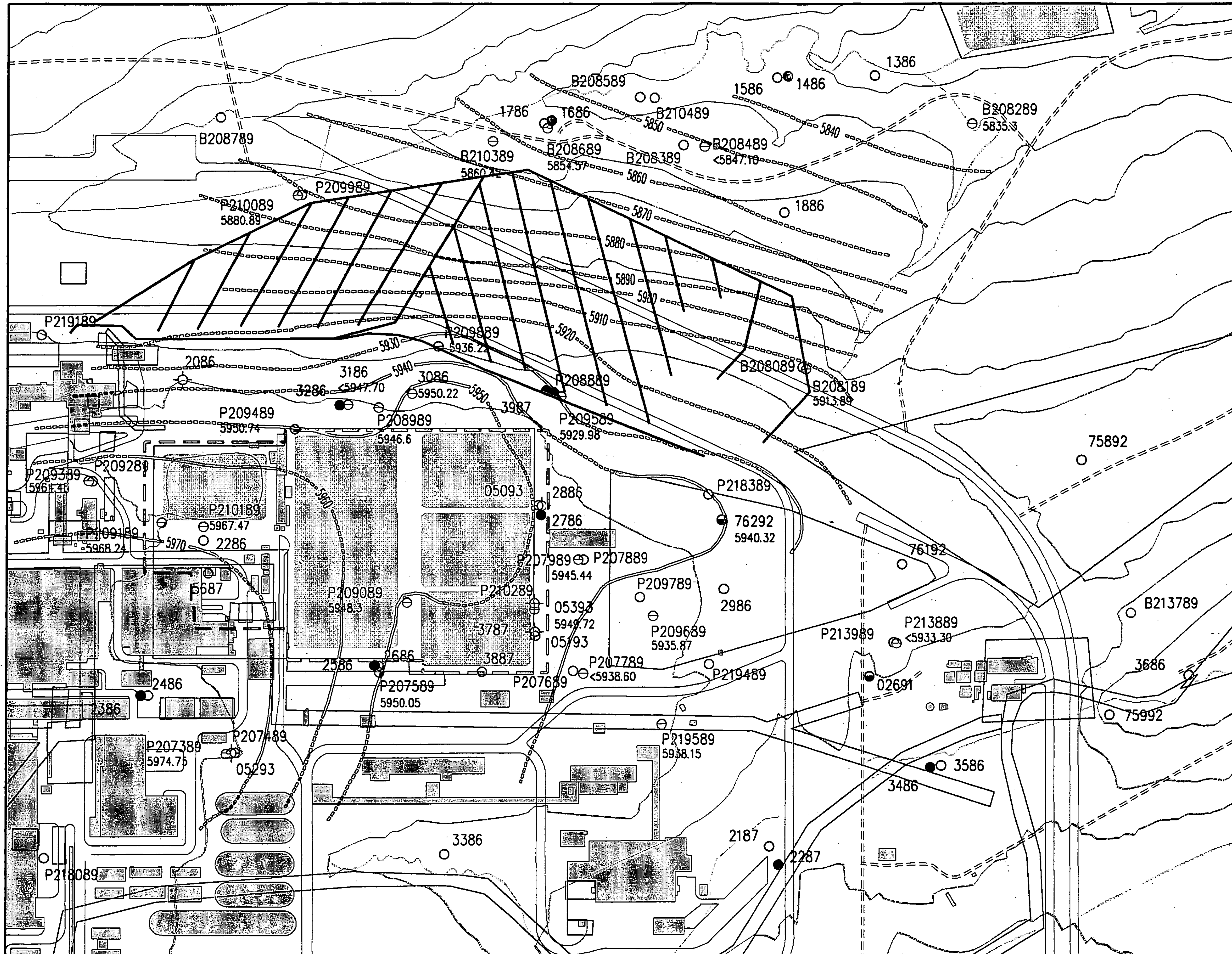
1994 Annual RCRA Groundwater Monitoring Report

Groundwater Potentiometric-Surface Map
UHSU Bedrock
Third Quarter (July) 1994

Figures 3-8
Date: February 20, 1995

94 RCRA-A 3-8



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Intercepter Trench System
- Groundwater Potentiometric Contours (feet above MSL); Dashed Where Approximately Located
- Areas of Unsaturated Surficial Material
- ND No Data
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Source: 1993 Annual RCRA Groundwater Monitoring Report

N

0 feet 250 500

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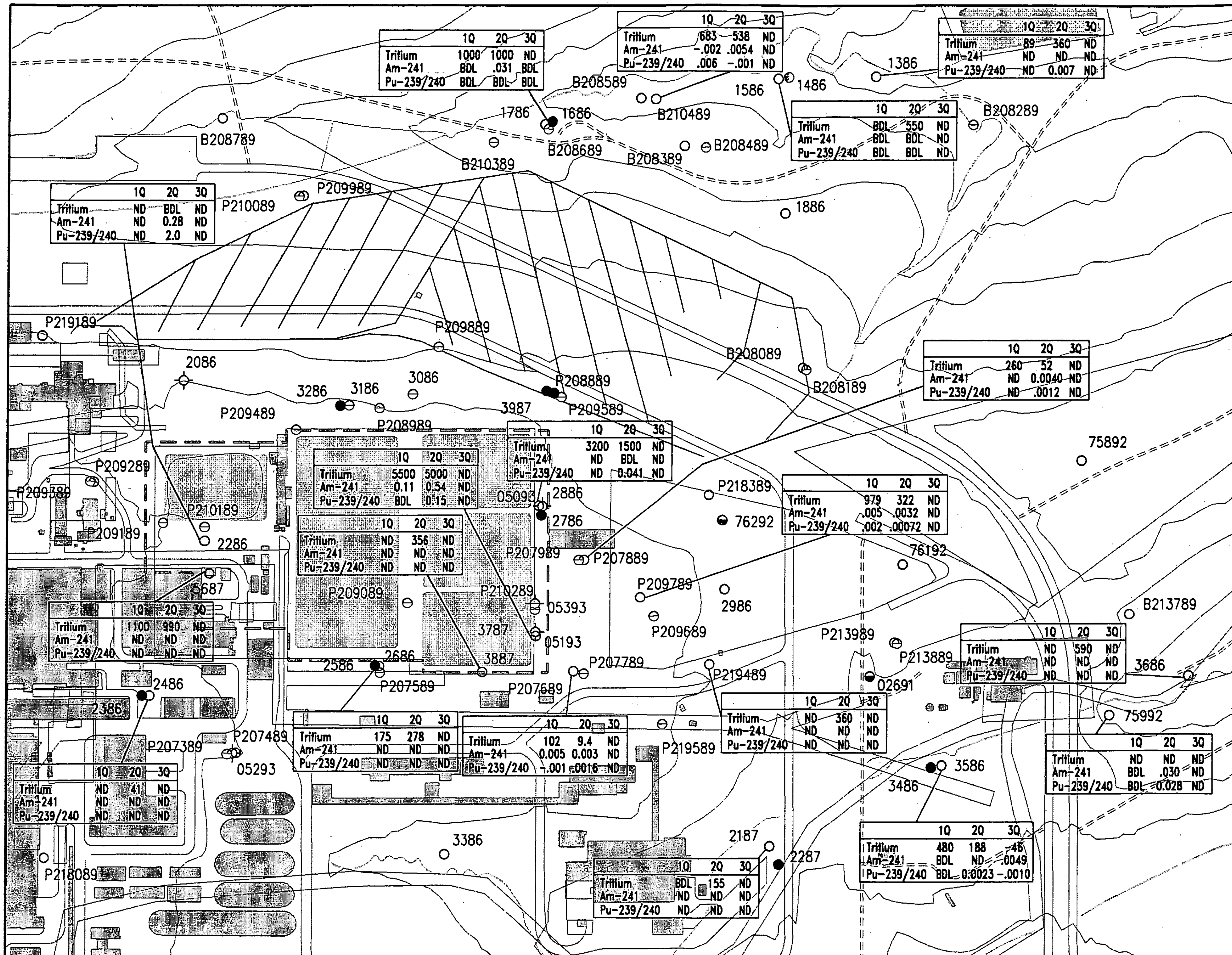
1994 Annual RCRA Groundwater Monitoring Report

Groundwater Potentiometric-Surface Map
UHSU Bedrock
Fourth Quarter (October) 1994

Figure 3-9

Date: February 20, 1995

94 RCRA-A 3-9



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit - UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit - LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Intercepter Trench System
- ND Data Not Available
- BDL Below Detection Limit
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Values exceeding background activity (means + 2 st. dev.) shown in red.

Source: 1993 Annual RCRA Groundwater Monitoring Report

0 feet 250 500

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Solar Evaporation Ponds

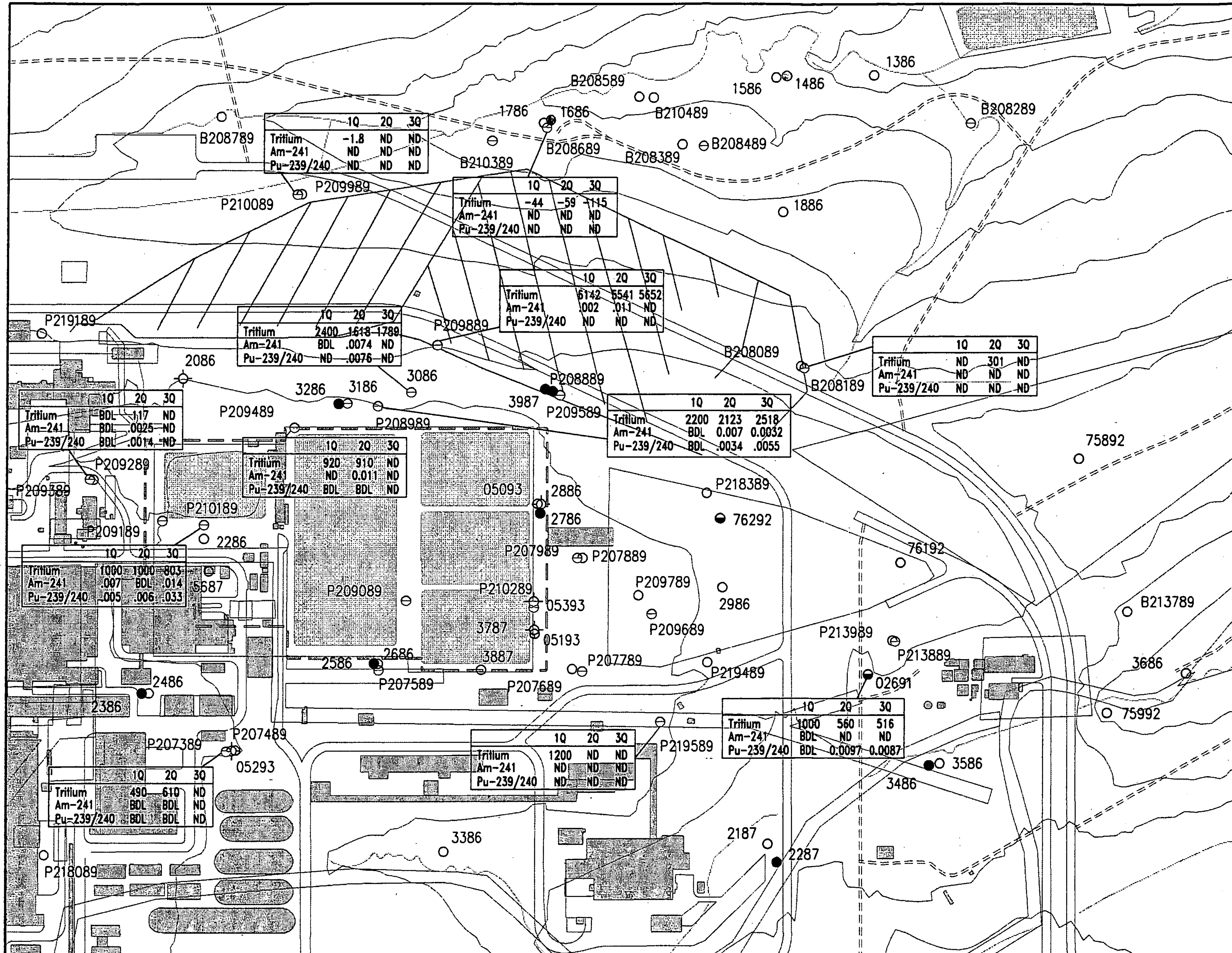
1994 Annual RCRA Groundwater Monitoring Report

Total Tritium, Am-241, and Pu-239/240 (pCi/L) in Groundwater
UHSU Surficial Materials, 1994

Figure 3-10

Date: February 20, 1995

94 RCRA-A 3-10



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit - UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit - LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Intercepter Trench System
- ND Data Not Available
- BDL Below Detection Limit
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Values exceeding background activity (mean + 2 st. dev.) shown in red.

Source: 1993 Annual RCRA Groundwater Monitoring Report

N

0 feet 250 500

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Golden, Colorado

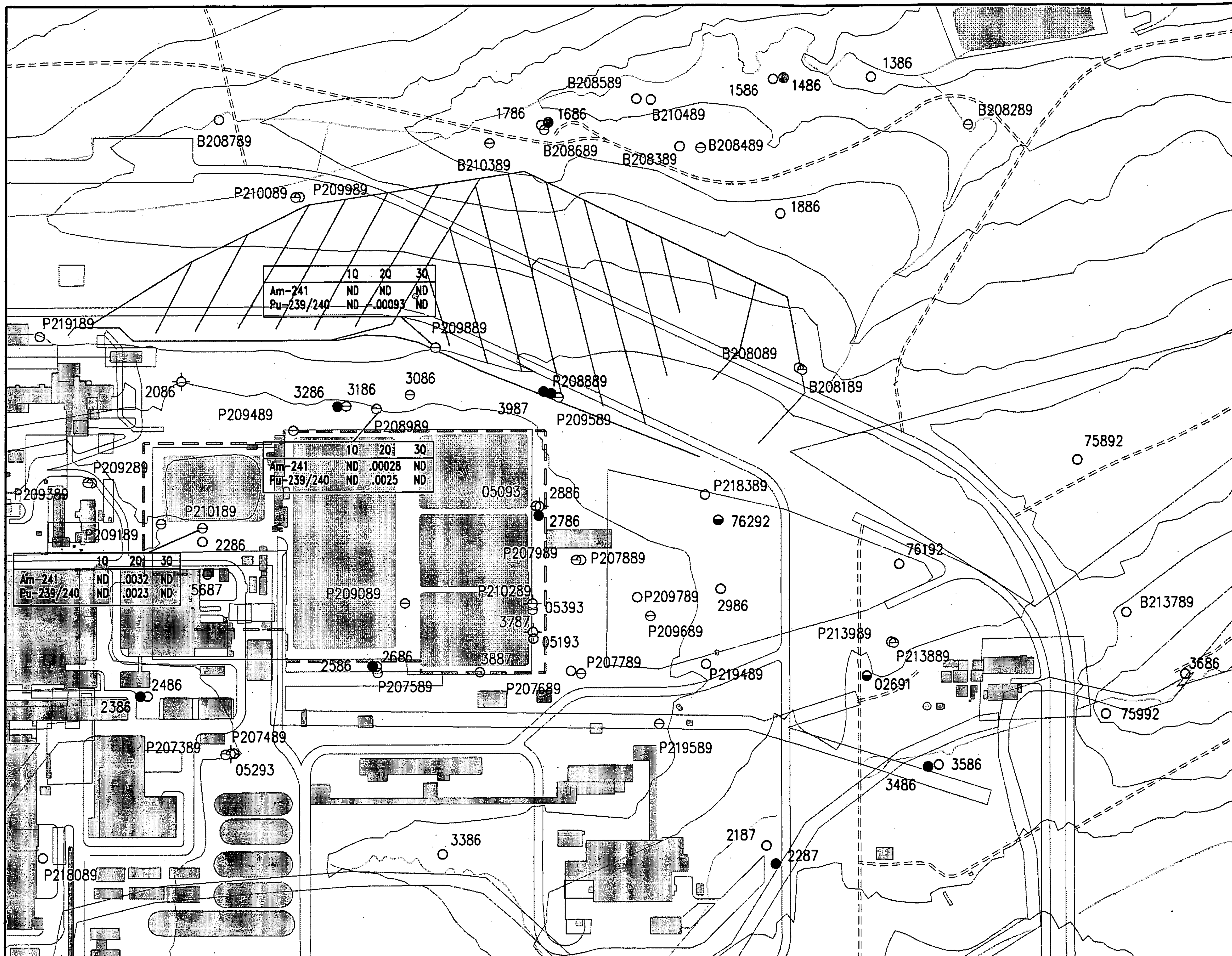
Solar Evaporation Ponds

1994 Annual RCRA Groundwater Monitoring Report

Total Tritium, Am-241, Pu-239/240 (pCi/L) in Groundwater UHSU Bedrock, 1994

Figure 3-11

Date: February 20, 1995



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Intercepter Trench System
- ND No Data
- BDL Below Detection Limits
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Values exceeding background activity (mean + 2 st. dev.) shown in red.

Source: 1993 Annual RCRA Groundwater Monitoring Report

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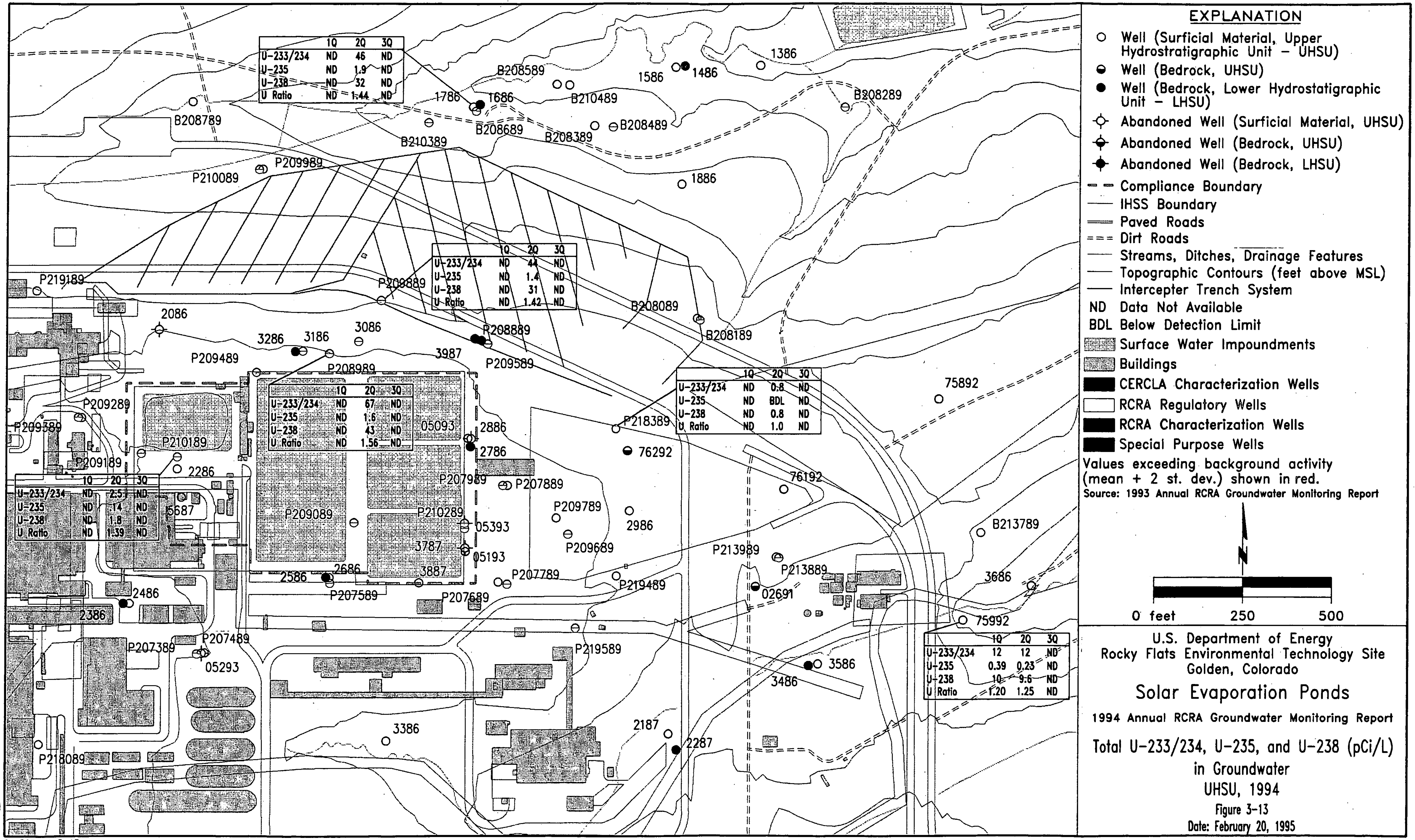
1994 Annual RCRA Groundwater Monitoring Report

Dissolved Am-241, Pu-239/240 (pCi/L) in Groundwater
UHSU, 1994

Figure 3-12

Date: February 20, 1995



	1Q	2Q	3Q
U-233/234	ND	46	ND
U-235	ND	1.9	ND
U-238	ND	32	ND
U Ratio	ND	1.44	ND

	1Q	2Q	3Q
U-233/234	ND	44	ND
U-235	ND	1.4	ND
U-238	ND	31	ND
U Ratio	ND	1.42	ND

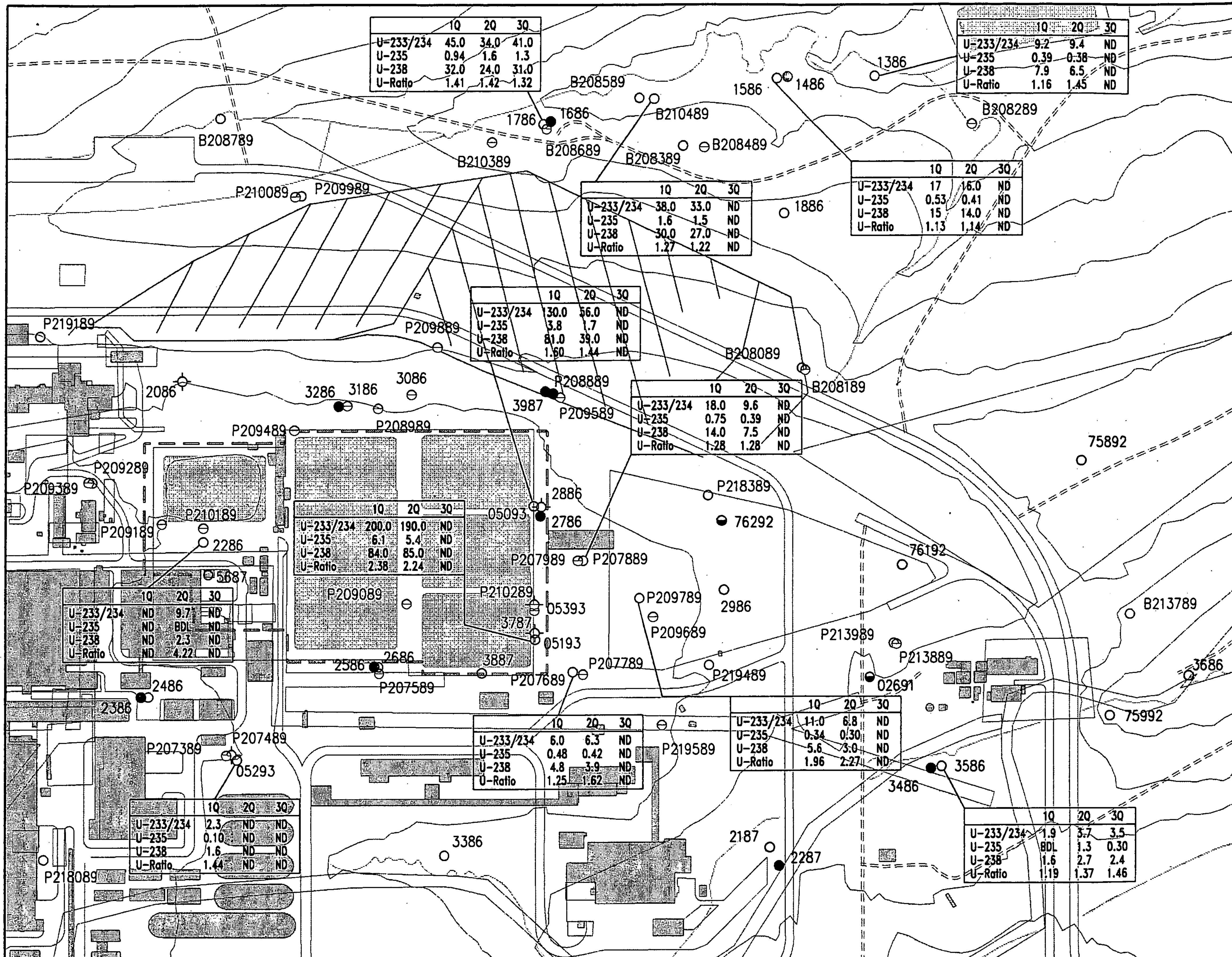
	1Q	2Q	3Q
U-233/234	ND	0.8	ND
U-235	ND	BDL	ND
U-238	ND	0.8	ND
U Ratio	ND	1.0	ND

	1Q	2Q	3Q
U-233/234	ND	67	ND
U-235	ND	1.6	ND
U-238	ND	43	ND
U Ratio	ND	1.56	ND

	1Q	2Q	3Q
U-233/234	ND	2.51	ND
U-235	ND	.14	ND
U-238	ND	1.8	ND
U Ratio	ND	1.39	ND

	1Q	2Q	3Q
U-233/234	12	12	ND
U-235	0.39	0.23	ND
U-238	10	9.6	ND
U Ratio	1.20	1.25	ND

94 RCRA-A 3-13



EXPLANATION

- ○ Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- ◒ Well (Bedrock, UHSU)
- ● Well (Bedrock, Lower Hydrostratigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Intercepter Trench System
- ND No Data
- BDL Below Detection Limits
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Values exceeding background activity (mean + 2 st. dev.) shown in red.

Source: 1993 Annual RCRA Groundwater Monitoring Report

N

0 feet 250 500

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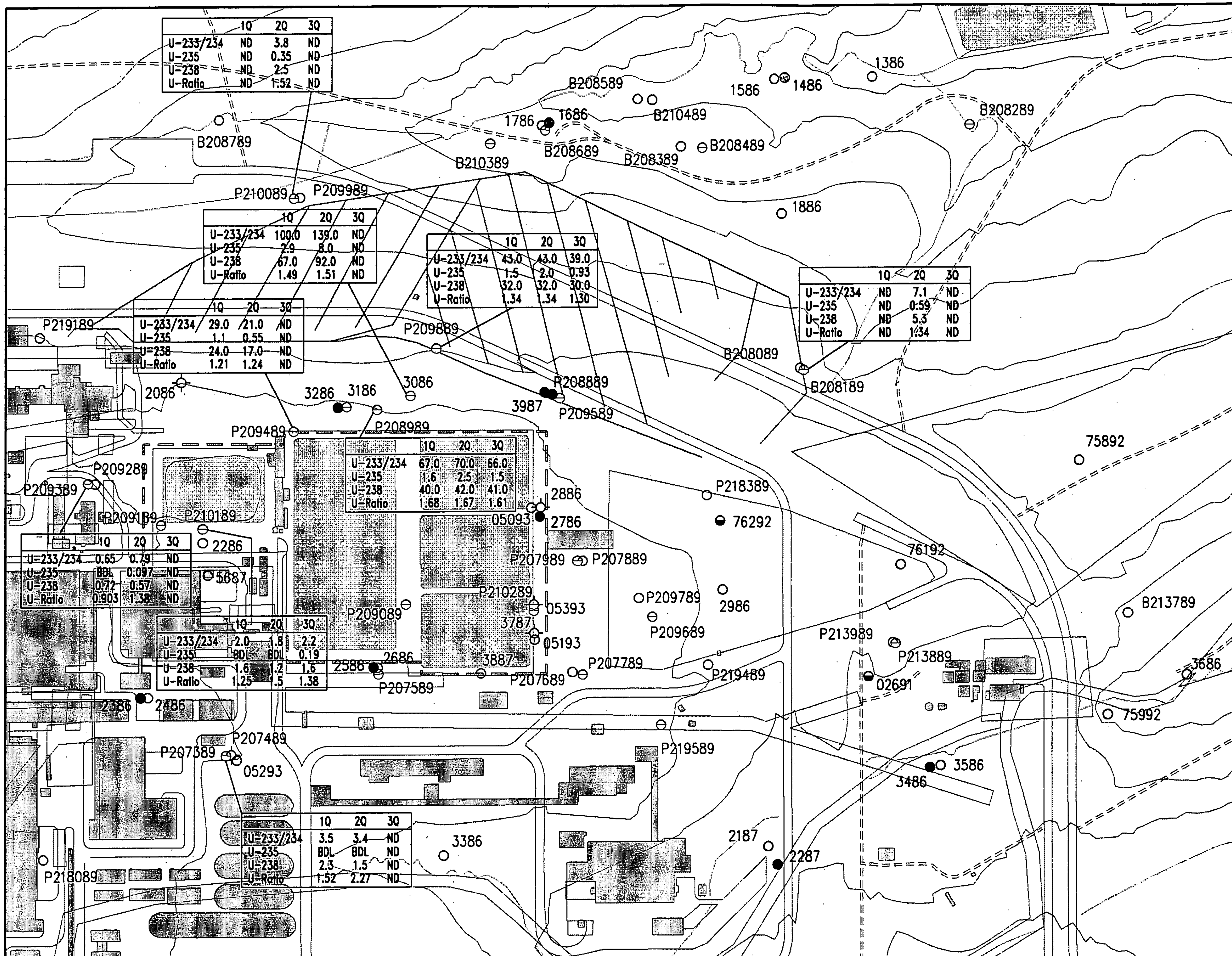
1994 Annual RCRA Groundwater Monitoring Report

Dissolved U-233/234, U-235, and U-238 (pCi/L) in Groundwater
UHSU Surficial Material, 1994

Figure 3-14

Date: February 20, 1995

94 RCRA-A 3-14



	1Q	2Q	3Q
U-233/234	ND	3.8	ND
U-235	ND	0.35	ND
U-238	ND	2.5	ND
U-Ratio	ND	1.52	ND

	1Q	2Q	3Q
U-233/234	100.0	139.0	ND
U-235	2.9	8.0	ND
U-238	67.0	92.0	ND
U-Ratio	1.49	1.51	ND

	1Q	2Q	3Q
U-233/234	43.0	43.0	39.0
U-235	1.5	2.0	0.93
U-238	32.0	32.0	30.0
U-Ratio	1.34	1.34	1.30

	1Q	2Q	3Q
U-233/234	29.0	21.0	ND
U-235	1.1	0.55	ND
U-238	24.0	17.0	ND
U-Ratio	1.21	1.24	ND

	1Q	2Q	3Q
U-233/234	ND	7.1	ND
U-235	ND	0.59	ND
U-238	ND	5.3	ND
U-Ratio	ND	1.34	ND

	1Q	2Q	3Q
U-233/234	67.0	70.0	66.0
U-235	1.6	2.5	1.5
U-238	40.0	42.0	41.0
U-Ratio	1.68	1.67	1.61

	1Q	2Q	3Q
U-233/234	0.65	0.79	ND
U-235	BDL	0.097	ND
U-238	0.72	0.57	ND
U-Ratio	0.903	1.38	ND

	1Q	2Q	3Q
U-233/234	2.0	1.8	2.2
U-235	BDL	BDL	0.19
U-238	1.6	1.2	1.6
U-Ratio	1.25	1.5	1.38

	1Q	2Q	3Q
U-233/234	3.5	3.4	ND
U-235	BDL	BDL	ND
U-238	2.3	1.5	ND
U-Ratio	1.52	2.27	ND

EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostratigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Intercepter Trench System
- ND No Data
- BDL Below Detection Limits
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Values exceeding background activity (mean + 2 st. dev.) shown in red.

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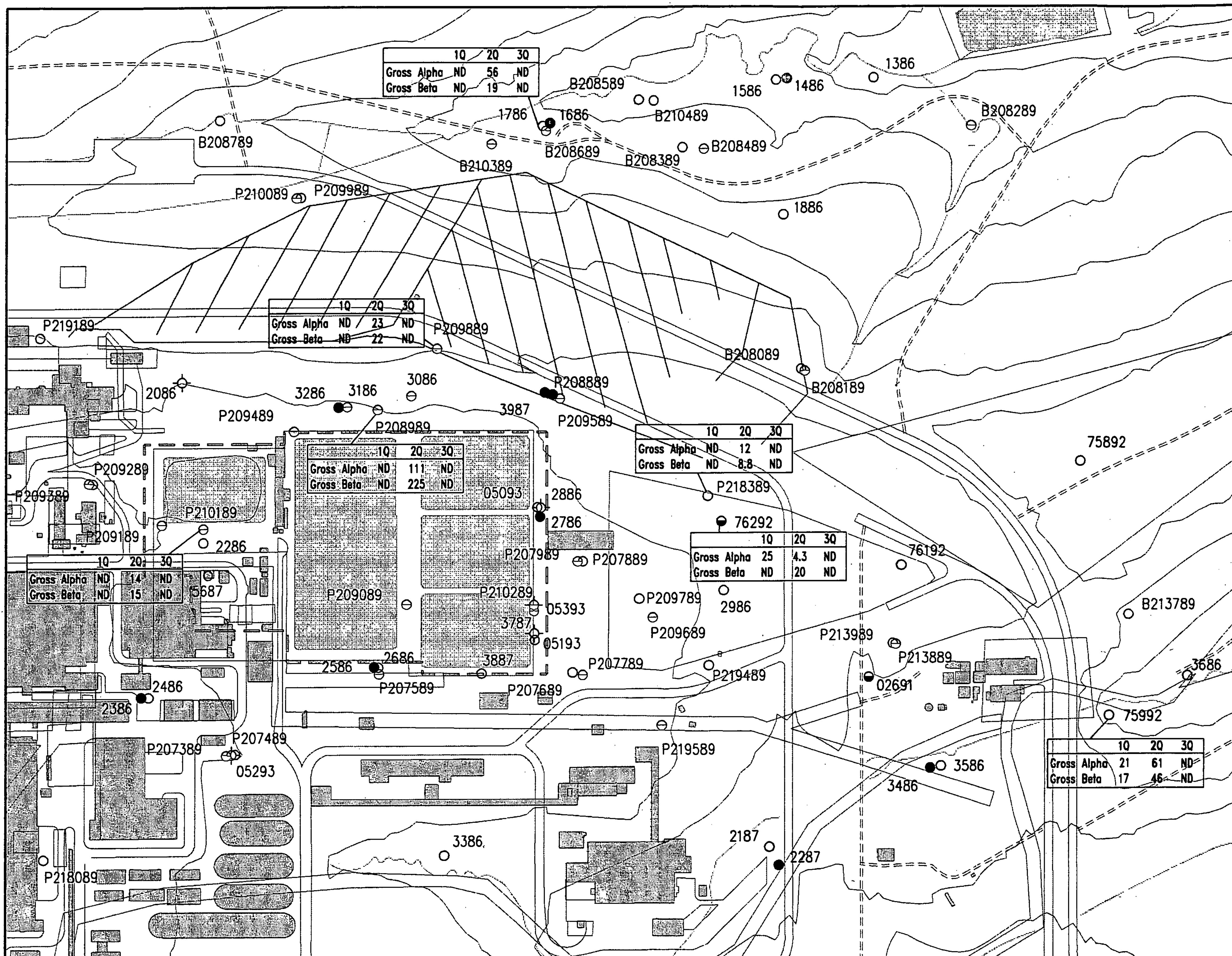
1994 Annual RCRA Groundwater Monitoring Report

Dissolved U-233/234, U-235, and U-238 (pCi/L) in Groundwater
UHSU Bedrock, 1994

Figure 3-15
Date: February 20, 1995



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Intercepter Trench System

ND No Data

BDL Below Detection Limits

- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Values exceeding background activity (mean + 2 st. dev.) shown in red.

Source: 1993 Annual RCRA Groundwater Monitoring Report

N

0 feet 250 500

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Golden, Colorado

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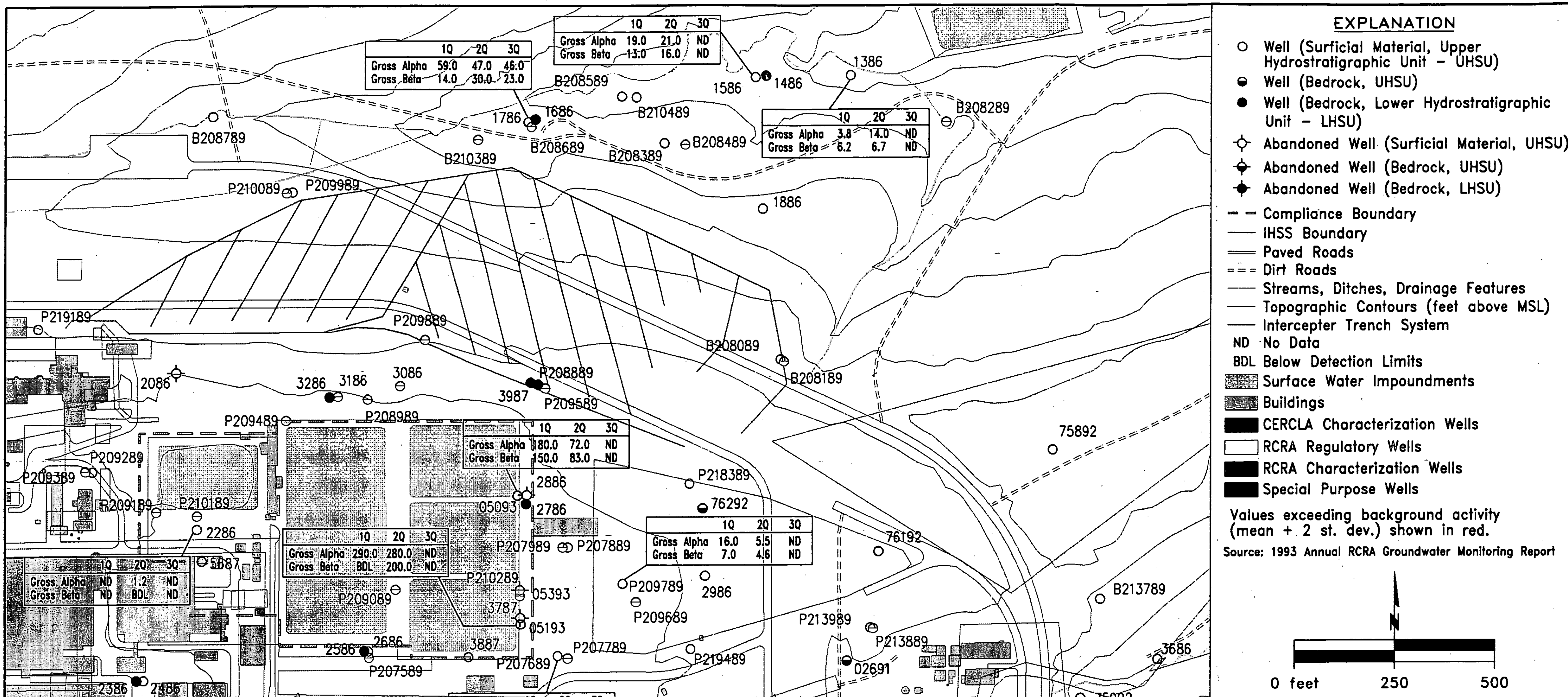
1994 Annual RCRA Groundwater Monitoring Report

Total Gross Alpha and Gross Beta (pCi/L) in Groundwater UHSU, 1994

Figure 3-16

Date: February 20, 1995

94 RCRA-A 3-16



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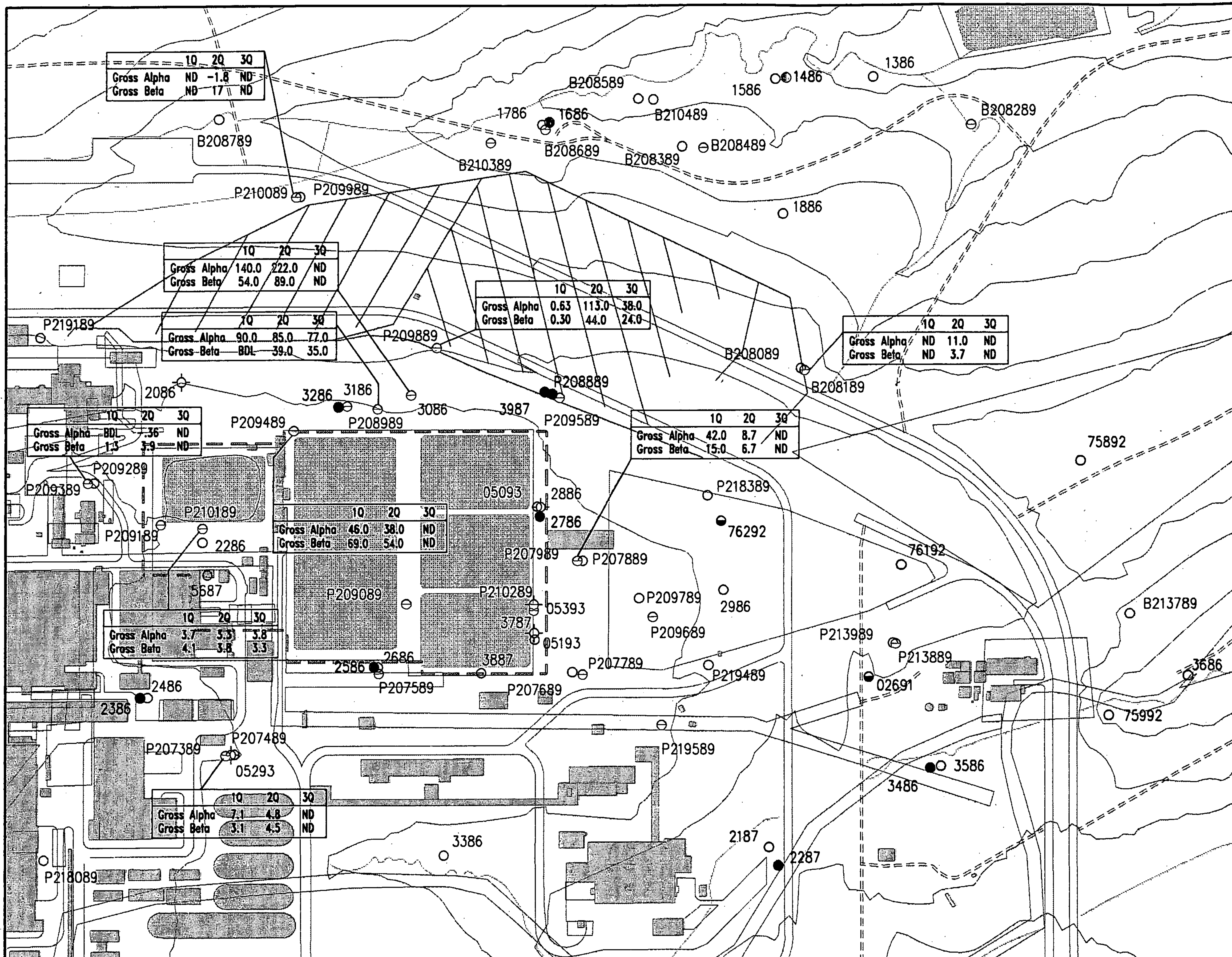
1994 Annual RCRA Groundwater Monitoring Report

Dissolved Gross Alpha and Gross Beta (pCi/L) in Groundwater Surficial Material, 1994

Figure 3-17

Date: February 20, 1995

94 RCRA-A 3-17



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostratigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Intercepter Trench System
- ND No Data
- BDL Below Detection Limits
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Values exceeding background activity (mean + 2 st. dev.) shown in red.

Source: 1993 Annual RCRA Groundwater Monitoring Report

N

0 feet 250 500

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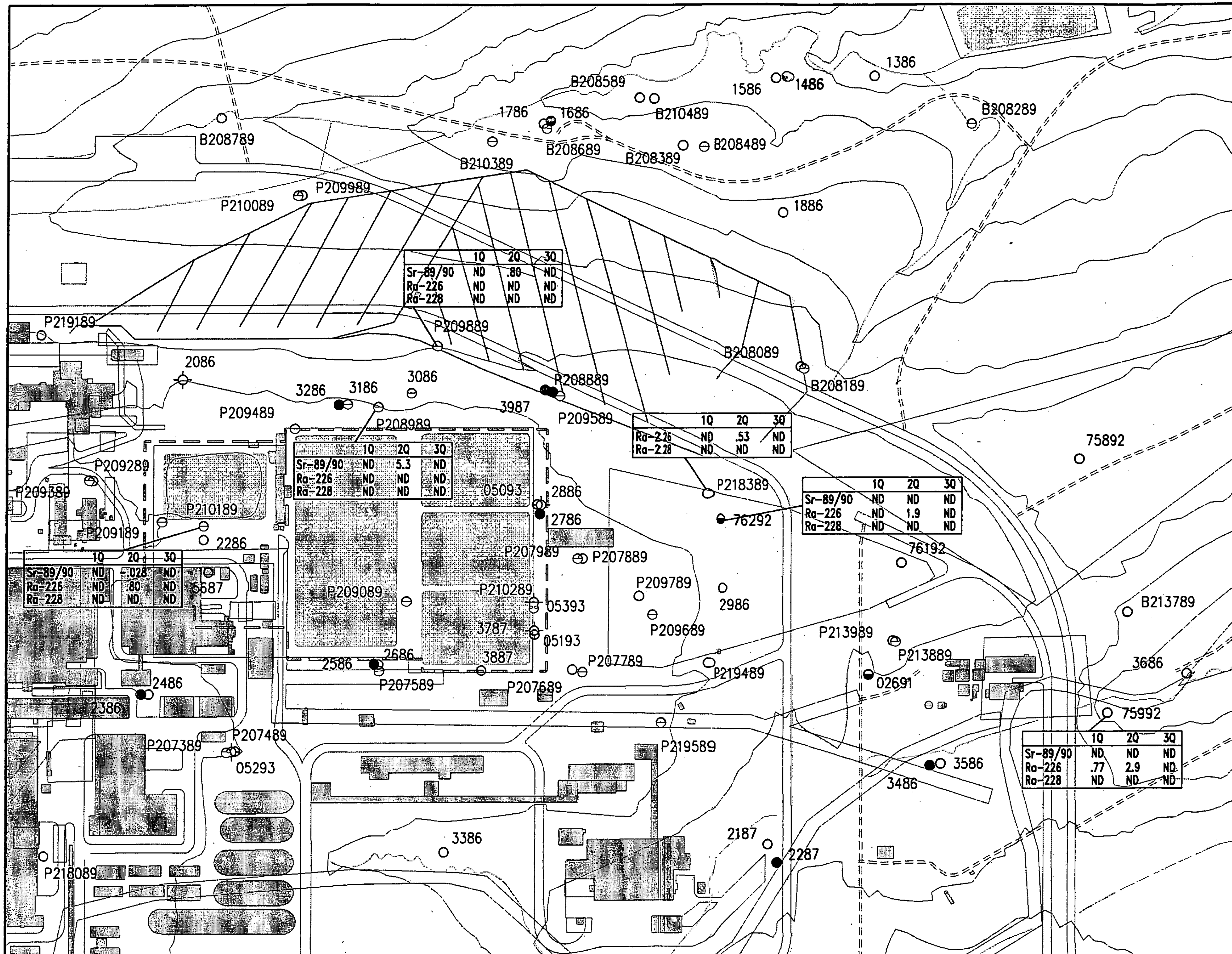
1994 Annual RCRA Groundwater Monitoring Report

Dissolved Gross Alpha and Gross Beta (pCi/L) in Groundwater
UHSU Bedrock, 1994

Figure 3-18

Date: February 20, 1995

94 RCRA-A 3-18



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Intercepter Trench System
- ND Data Not Available
- BDL Below Detection Limit
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Values exceeding background activity (mean + 2 st. dev.) shown in red.

Source: 1993 Annual RCRA Groundwater Monitoring Report

N

0 feet 250 500

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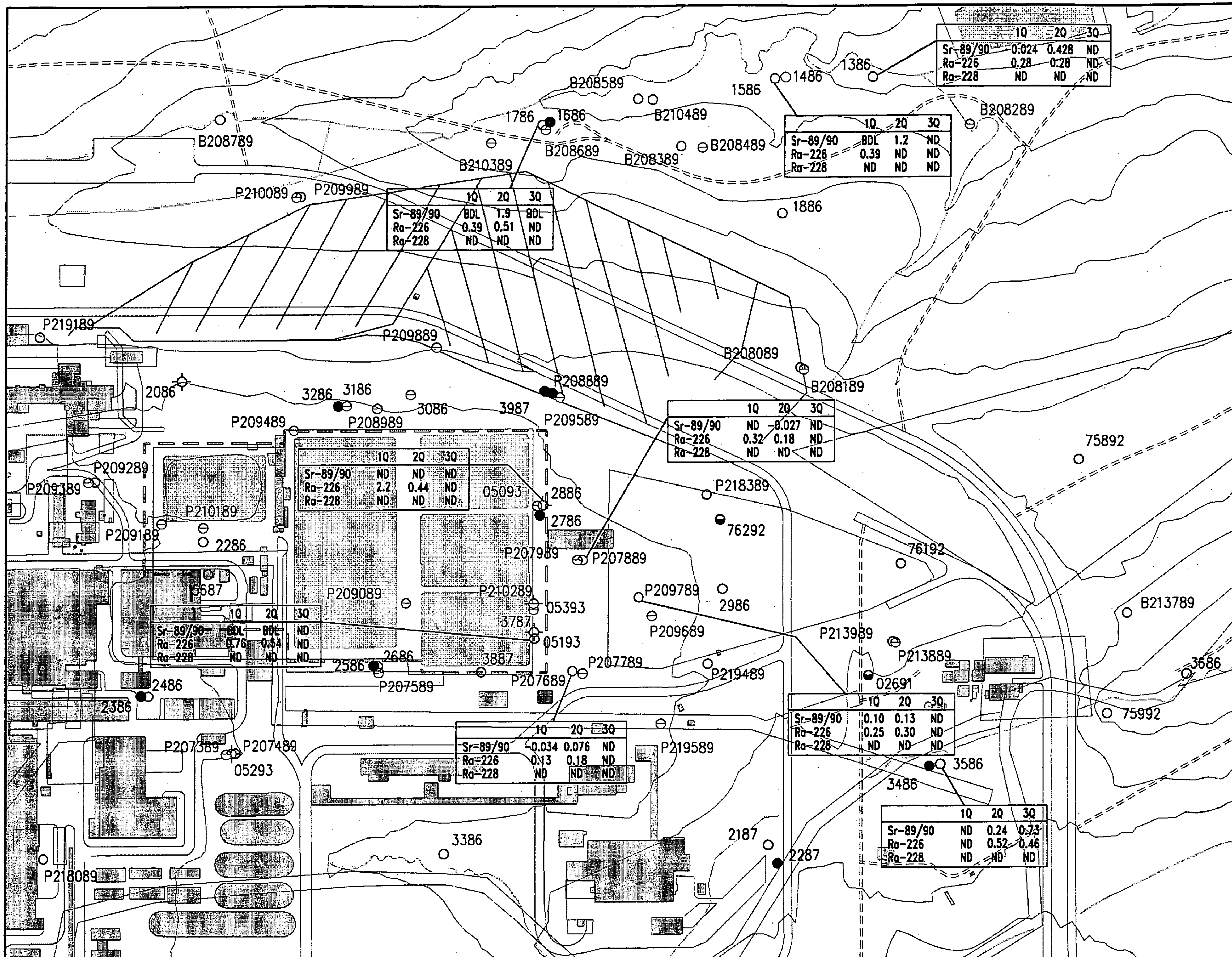
Total Sr-89/90, Ra-226, and Ra-228 (pCi/L) in Groundwater
UHSU, 1994

Figure 3-19

Date: February 20, 1995

94 RCRA-A 3-19



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostratigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Intercepter Trench System
- ND No Data
- BDL Below Detection Limits
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Values exceeding background activity (mean + 2 st. dev.) shown in red.

Source: 1993 Annual RCRA Groundwater Monitoring Report

N

0 feet 250 500

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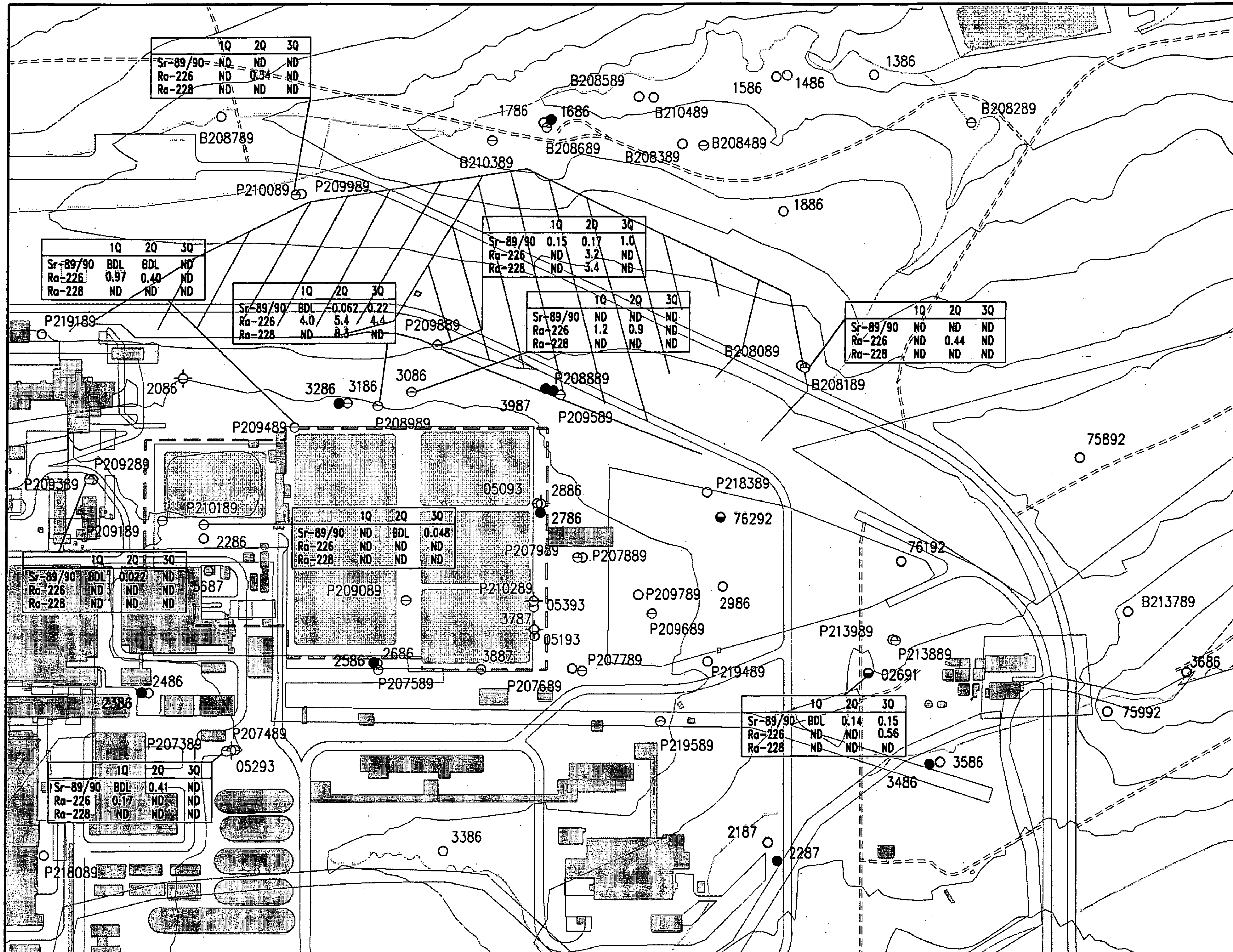
Dissolved Sr-89/90, Ra-226, and Ra-228 (pCi/L) in Groundwater
UHSU Surficial Materials, 1994

Figure 3-20

Date: February 20, 1995

94 RCRA-A 3-20



EXPLANATION

- ○ Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- ⊖ Well (Bedrock, UHSU)
- ● Well (Bedrock, Lower Hydrostratigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Intercepter Trench System
- ND No Data
- BDL Below Detection Limits
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- **RCRA Characterization Wells**
- Special Purpose Wells

Values exceeding background activity (mean + 2 st. dev.) shown in red.

Source: 1993 Annual RCRA Groundwater Monitoring Report

N

0 feet 250 500

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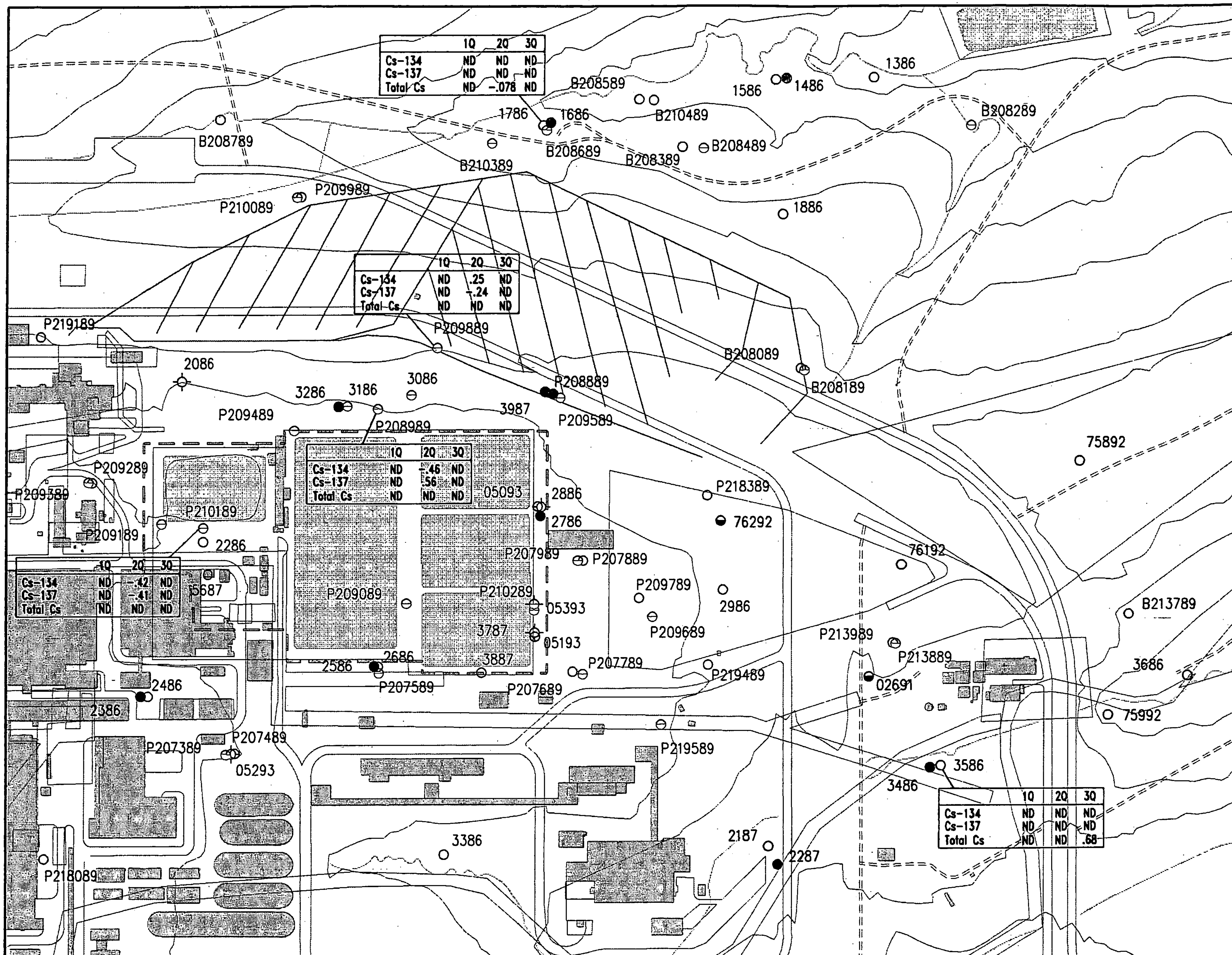
Solar Evaporation Ponds

1994 Annual RCRA Groundwater Monitoring Report

Dissolved Sr-89/90, Ra-226, and Ra-228 (pCi/L) in Groundwater UHSU Bedrock, 1994

Figure 3-21

Date: February 20, 1995



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Intercepter Trench System
- ND Data Not Available
- BDL Below Detection Limit
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Values exceeding background activity (mean + 2 st. dev.) shown in red.

Source: 1993 Annual RCRA Groundwater Monitoring Report

N

0 feet 250 500

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Solar Evaporation Ponds

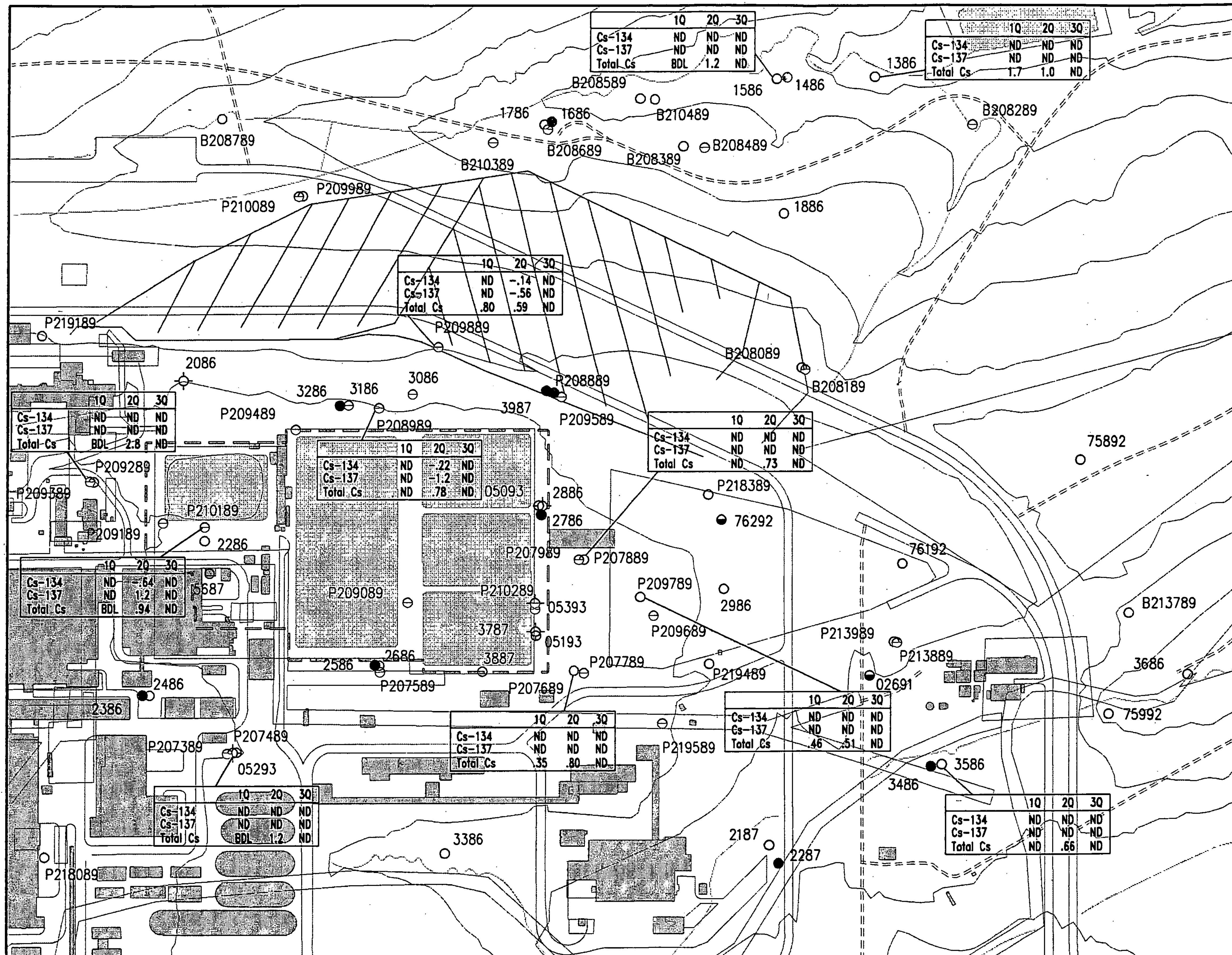
1994 Annual RCRA Groundwater Monitoring Report

Total Cs-134, Cs-137, and Total Radiocesium (pCi/L) in Groundwater

UHSU, 1994

Figure 3-22

Date: February 20, 1995



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Intercepter Trench System
- ND Data Not Available
- BDL Below Detection Limit
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Values exceeding background activity (mean + 2 st. dev.) shown in red.

Source: 1993 Annual RCRA Groundwater Monitoring Report

N

0 feet 250 500

U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado

Solar Evaporation Ponds

1994 Annual RCRA Groundwater Monitoring Report

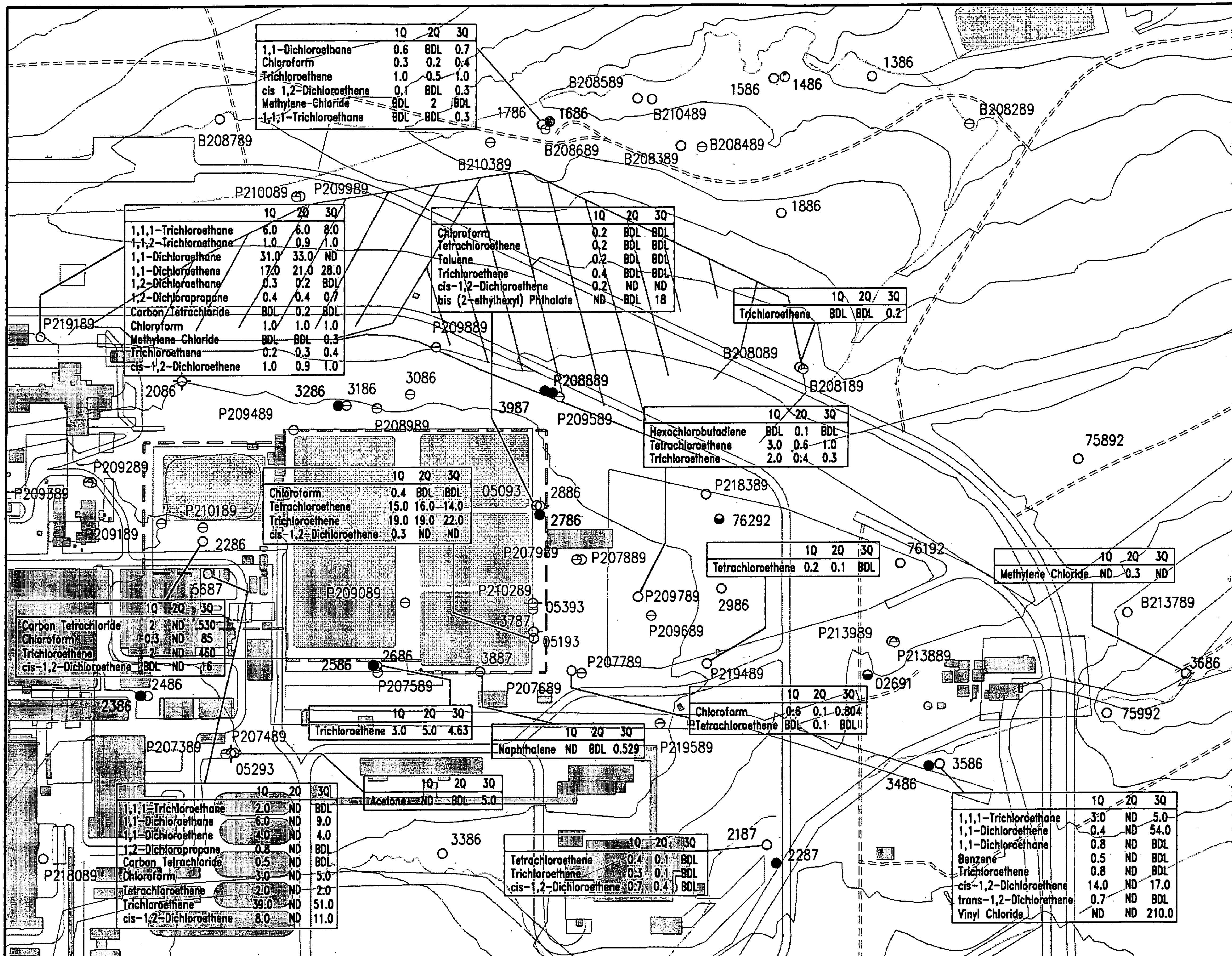
Dissolved Cs-134, Cs-137, and Total Radiocesium (pCi/L) in Groundwater

UHSU, 1994

Figure 3-23

Date: February 20, 1995

94 RCRA-A 3-23



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Intercepter Trench System
- ND No Data
- BDL Below Detection Limits
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Source: 1993 Annual RCRA Groundwater Monitoring Report

N

0 feet 250 500

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Golden, Colorado

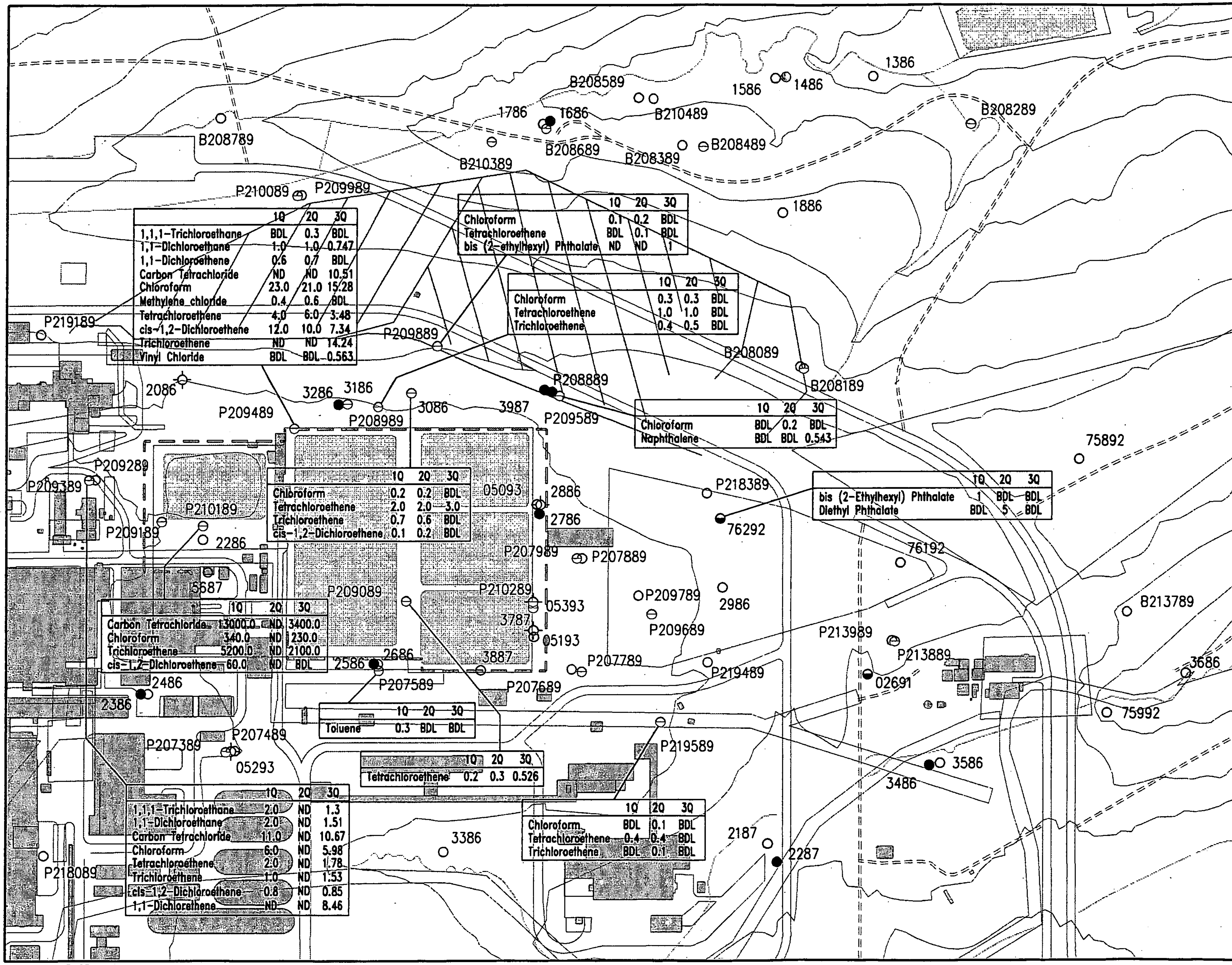
Solar Evaporation Ponds

1994 Annual RCRA Groundwater Monitoring Report

Organic Compounds (ug/L) in Groundwater UHSU Surficial Materials, 1994

Figure 3-24

Date: February 20, 1995



	1Q	2Q	3Q
1,1,1-Trichloroethane	BDL	0.3	BDL
1,1-Dichloroethane	1.0	1.0	0.747
1,1-Dichloroethene	0.6	0.7	BDL
Carbon Tetrachloride	ND	ND	10.51
Chloroform	23.0	21.0	15.28
Methylene chloride	0.4	0.6	BDL
Tetrachloroethene	4.0	6.0	3.48
cis-1,2-Dichloroethene	12.0	10.0	7.34
Trichloroethene	ND	ND	14.24
Vinyl Chloride	BDL	BDL	0.563

	1Q	2Q	3Q
Chloroform	0.1	0.2	BDL
Tetrachloroethene	BDL	0.1	BDL
bis (2-ethylhexyl) Phthalate	ND	ND	1

	1Q	2Q	3Q
Chloroform	0.3	0.3	BDL
Tetrachloroethene	1.0	1.0	BDL
Trichloroethene	0.4	0.5	BDL

	1Q	2Q	3Q
Chloroform	BDL	0.2	BDL
Naphthalene	BDL	BDL	0.543

	1Q	2Q	3Q
bis (2-Ethylhexyl) Phthalate	1	BDL	BDL
Diethyl Phthalate	BDL	5	BDL

	1Q	2Q	3Q
Chloroform	0.2	0.2	BDL
Tetrachloroethene	2.0	2.0	3.0
Trichloroethene	0.7	0.6	BDL
cis-1,2-Dichloroethene	0.1	0.2	BDL

	1Q	2Q	3Q
Carbon Tetrachloride	13000.0	ND	3400.0
Chloroform	340.0	ND	230.0
Trichloroethene	5200.0	ND	2100.0
cis-1,2-Dichloroethene	60.0	ND	BDL

	1Q	2Q	3Q
Toluene	0.3	BDL	BDL

	1Q	2Q	3Q
Tetrachloroethene	0.2	0.3	0.526

	1Q	2Q	3Q
1,1,1-Trichloroethane	2.0	ND	1.3
1,1-Dichloroethane	2.0	ND	1.51
Carbon Tetrachloride	11.0	ND	10.67
Chloroform	6.0	ND	5.98
Tetrachloroethene	2.0	ND	1.78
Trichloroethene	1.0	ND	1.53
cis-1,2-Dichloroethene	0.8	ND	0.85
1,1-Dichlorethene	ND	ND	8.46

	1Q	2Q	3Q
Chloroform	BDL	0.1	BDL
Tetrachloroethene	0.4	0.4	BDL
Trichloroethene	BDL	0.1	BDL

EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Intercepter Trench System
- ND No Data
- BDL Below Detection Limits
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Source: 1993 Annual RCRA Groundwater Monitoring Report

N

0 feet 250 500

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Golden, Colorado

Solar Evaporation Ponds

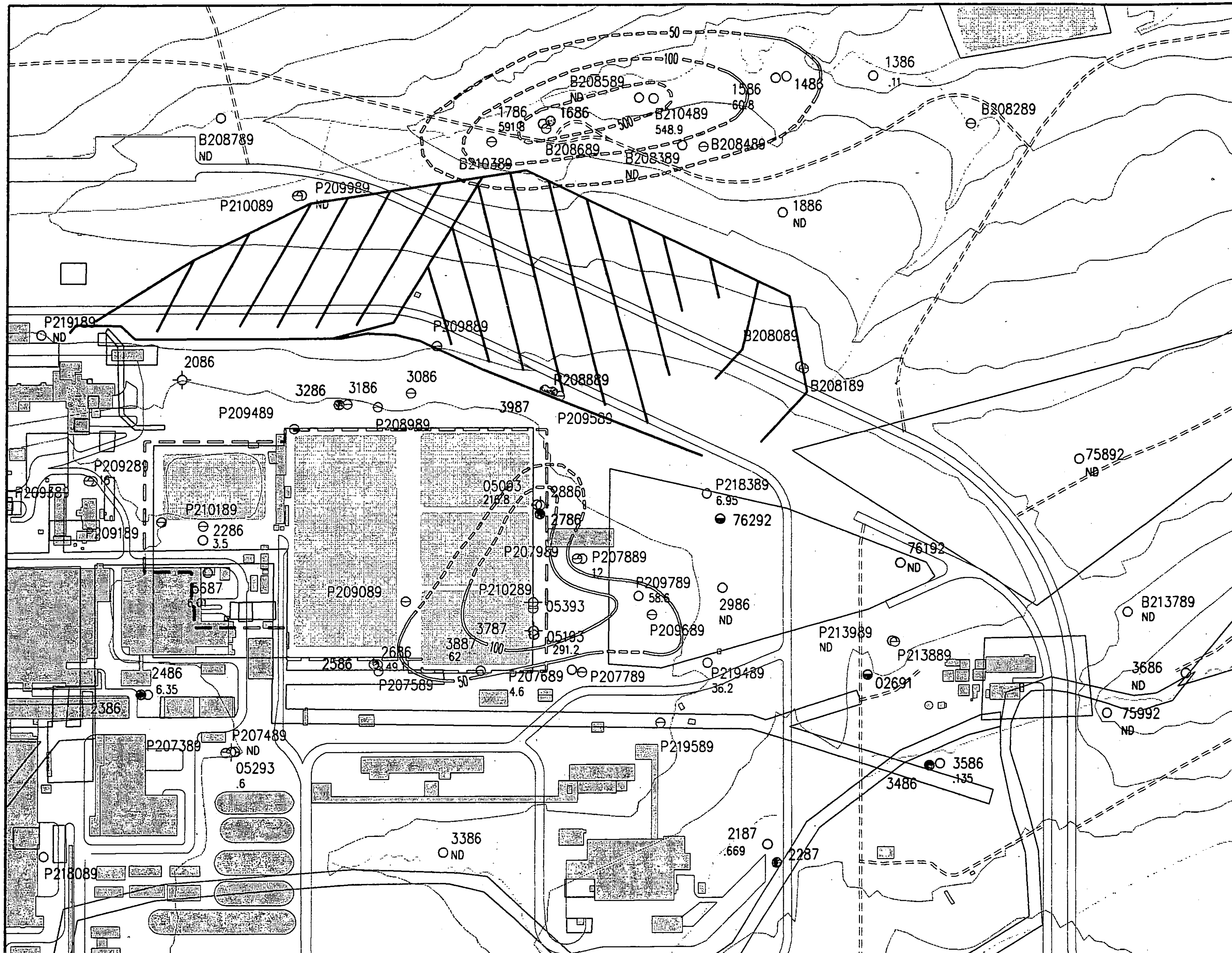
1994 Annual RCRA Groundwater Monitoring Report

Organic Compounds (ug/L) in Groundwater UHSU Bedrock, 1994

Figure 3-25

Date: February 20, 1995

94 RCRA-A 3-25



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Intercepter Trench System
- Isoconcentration Contours (feet above MSL); Dashed Where Approximately Located
- ND No Data
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Source: 1993 Annual RCRA Groundwater Monitoring Report

0 feet 250 500

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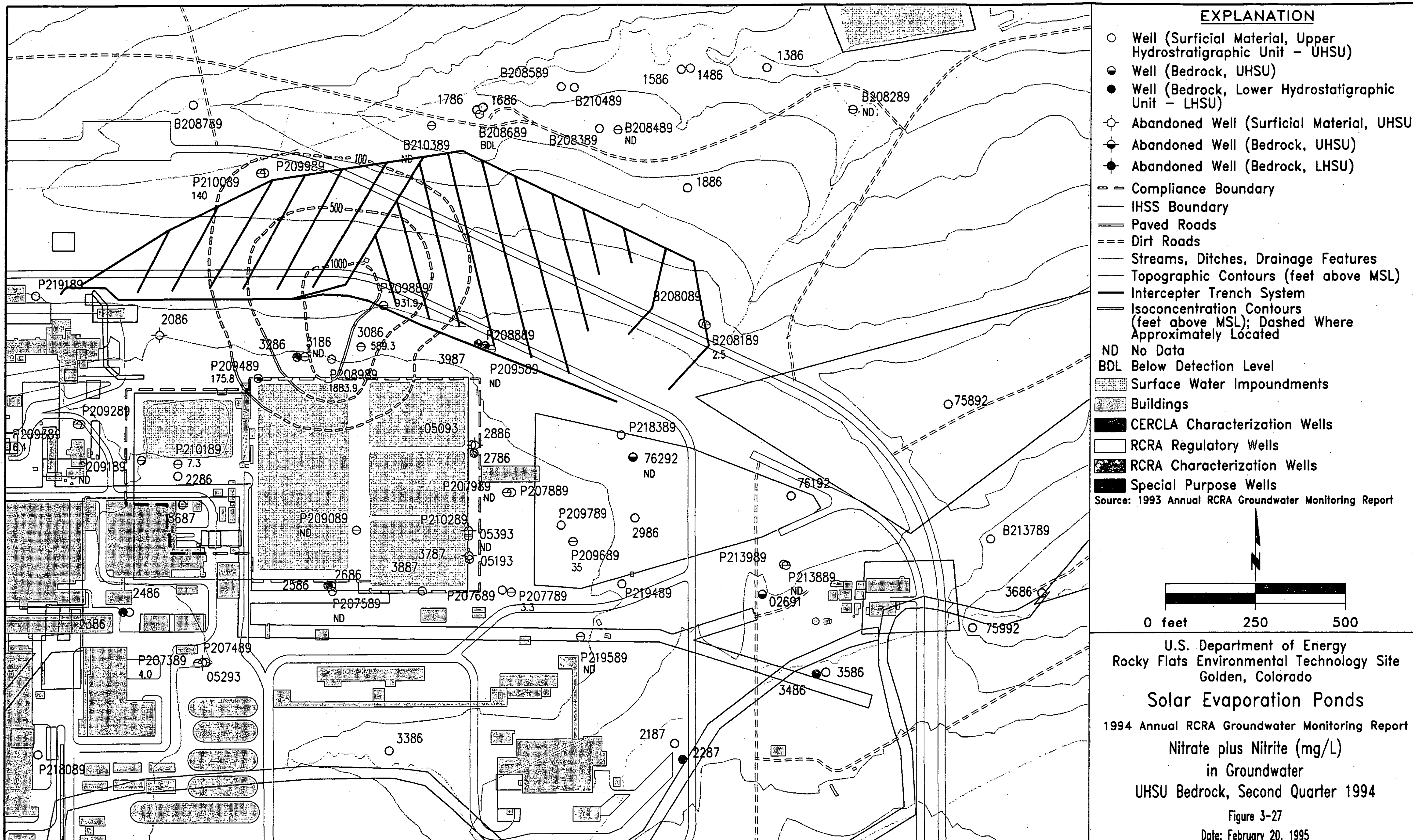
1994 Annual RCRA Groundwater Monitoring Report

Nitrate plus Nitrite (mg/L)
in Groundwater
UHSU Surficial Materials, Second Quarter 1994

Figure 3-26
Date: February 20, 1995



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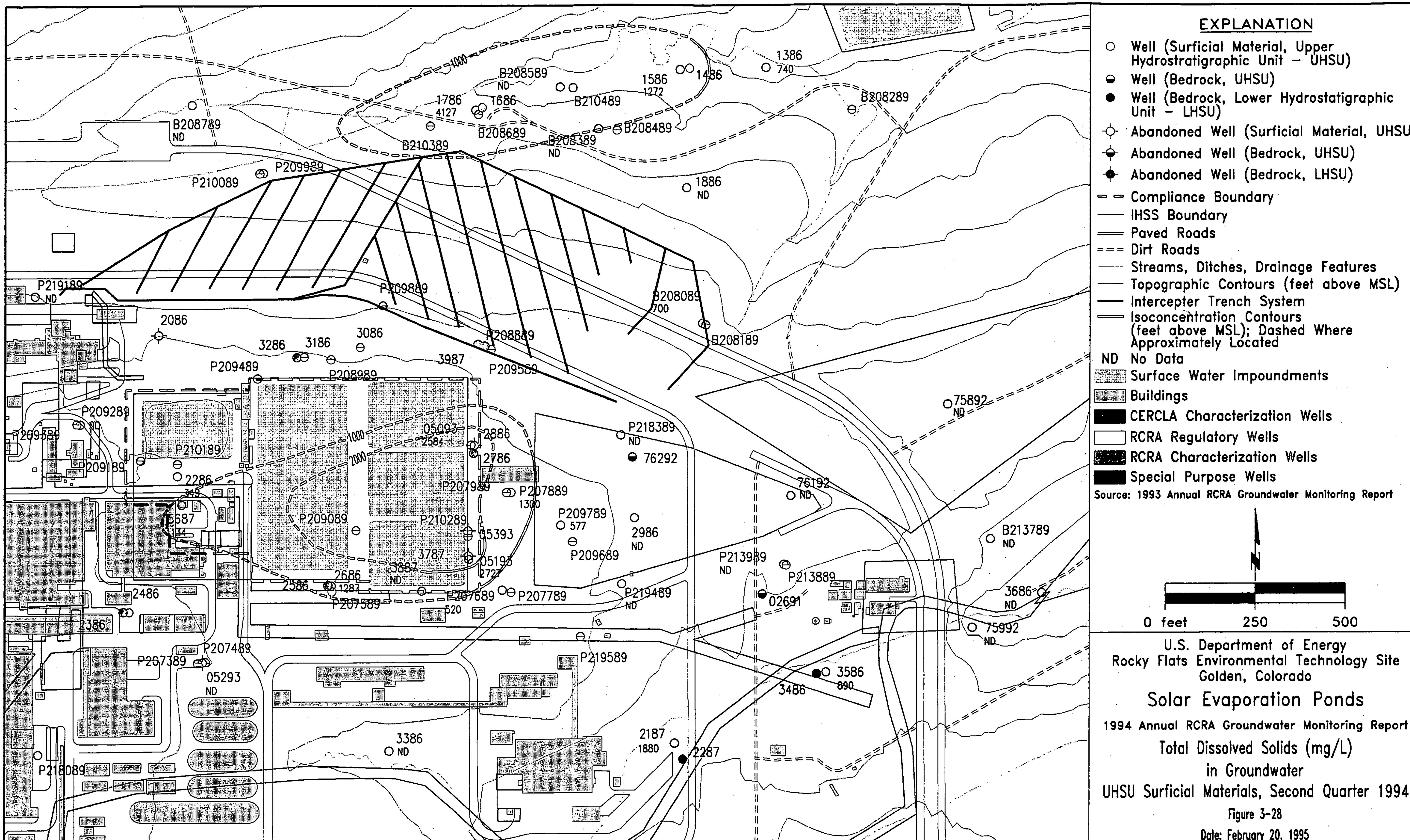
1994 Annual RCRA Groundwater Monitoring Report

Nitrate plus Nitrite (mg/L) in Groundwater
UHSU Bedrock, Second Quarter 1994

Figure 3-27

Date: February 20, 1995



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1994 Annual RCRA Groundwater Monitoring Report

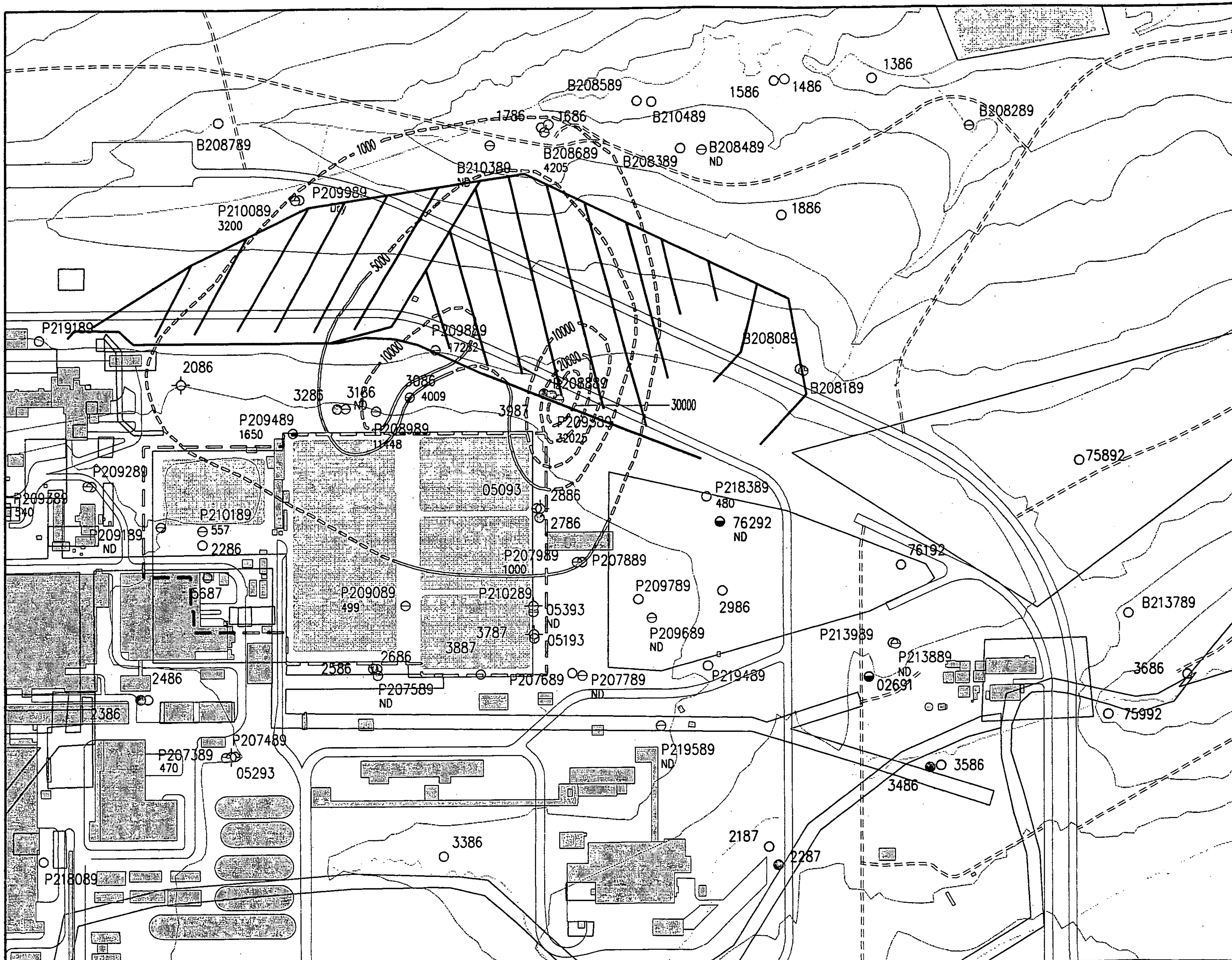
Total Dissolved Solids (mg/L) in Groundwater

UHSU Surficial Materials, Second Quarter 1994

Figure 3-28

Date: February 20, 1995

94 RCRA-A 3-28



EXPLANATION

- ○ Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- ● Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Intercepter Trench System
- Isoconcentration Contours (feet above MSL); Dashed Where Approximately Located
- ND No Data
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Source: 1993 Annual RCRA Groundwater Monitoring Report

0 feet 250 500

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Solar Evaporation Ponds

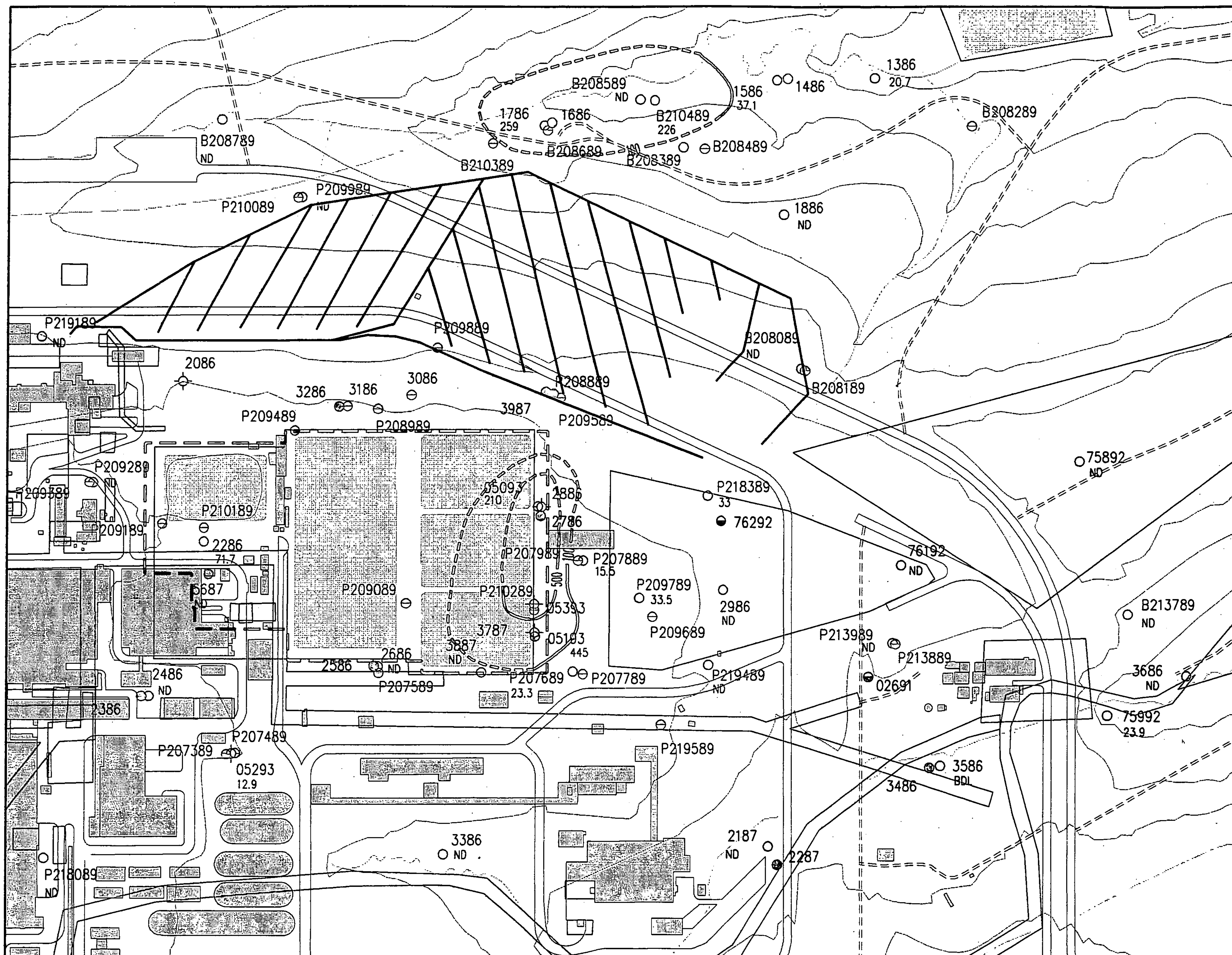
1994 Annual RCRA Groundwater Monitoring Report

Total Dissolved Solids (mg/L)
in Groundwater
UHSU Bedrock, Second Quarter 1994

Figure 3-29

Date: February 20, 1995

94 RCRA-A 3-29



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Intercepter Trench System
- Isoconcentration Contours (feet above MSL); Dashed Where Approximately Located
- ND No Data
- BDL Below Detection Limit
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Source: 1993 Annual RCRA Groundwater Monitoring Report

N

0 feet 250 500

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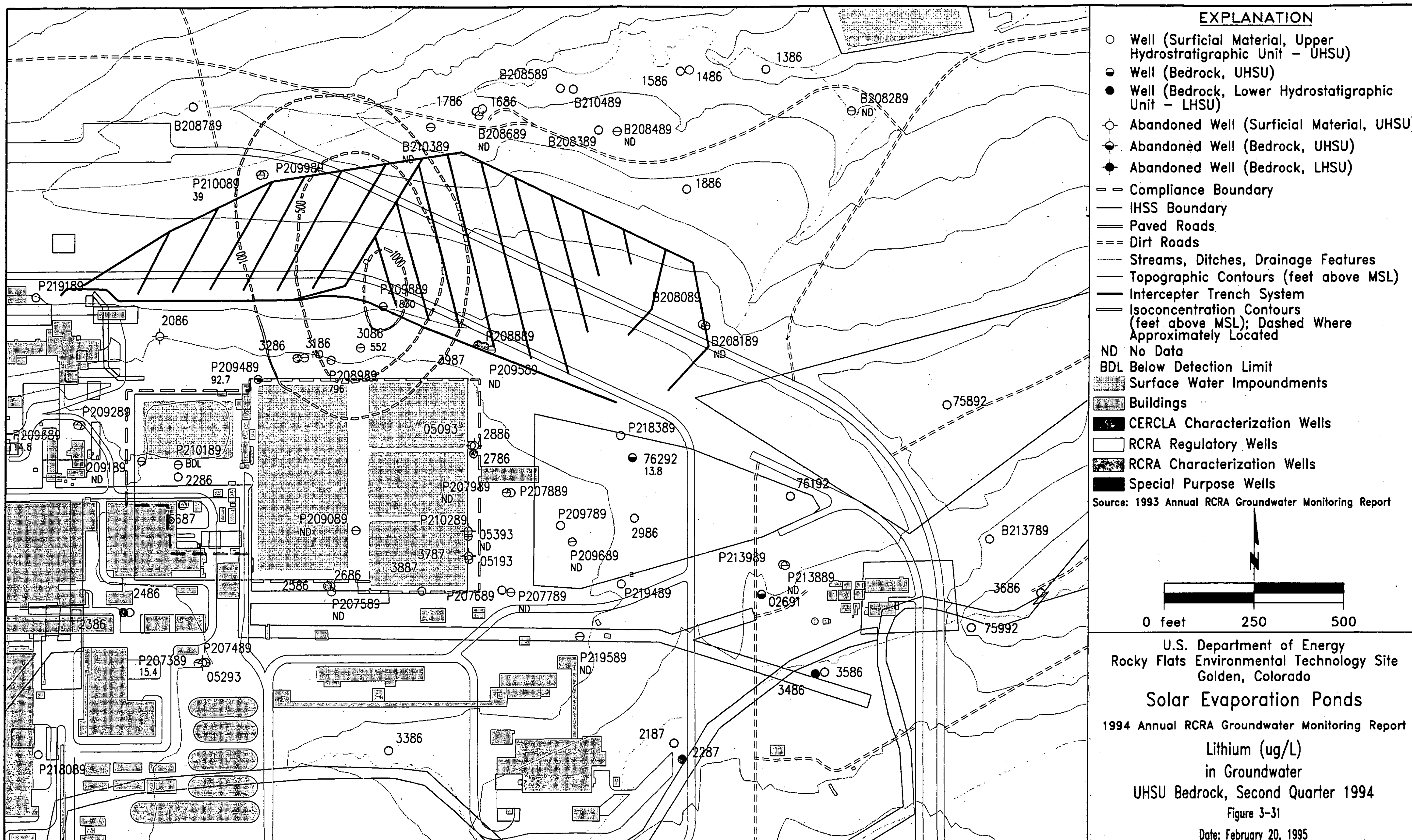
Solar Evaporation Ponds

1994 Annual RCRA Groundwater Monitoring Report

Lithium (ug/L)
in Groundwater
UHSU Surficial Materials, Second Quarter 1994

Figure 3-30

Date: February 20, 1995



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Solar Evaporation Ponds

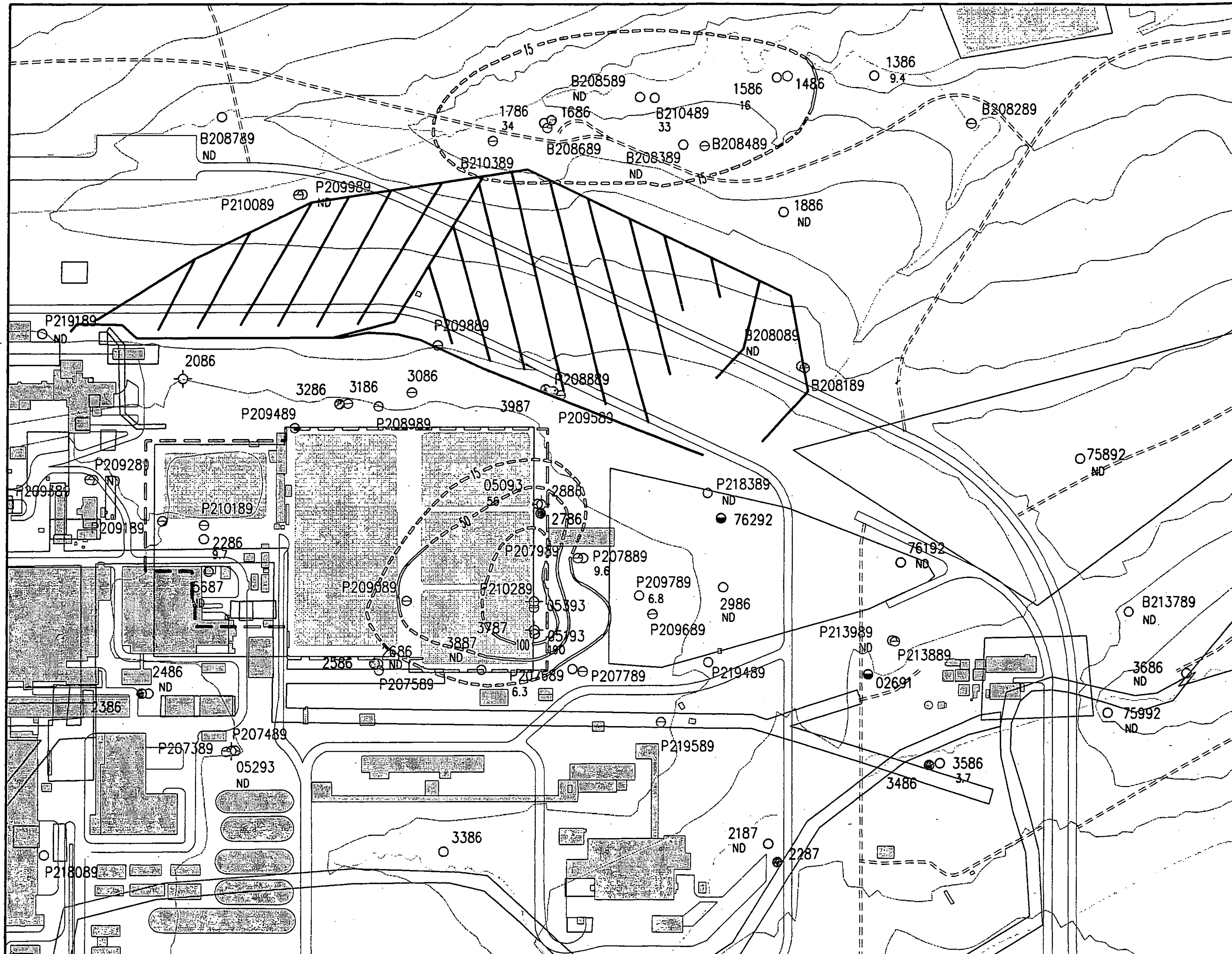
1994 Annual RCRA Groundwater Monitoring Report

Lithium (ug/L)
in Groundwater
UHSU Bedrock, Second Quarter 1994

Figure 3-31

Date: February 20, 1995

94 RCRA-A 3-31



EXPLANATION

- ○ Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- ◒ Well (Bedrock, UHSU)
- ● Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Intercepter Trench System
- Isoconcentration Contours (feet above MSL); Dashed Where Approximately Located
- ND No Data
- BDL Below Detection Limit
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Source: 1993 Annual RCRA Groundwater Monitoring Report

N

0 feet 250 500

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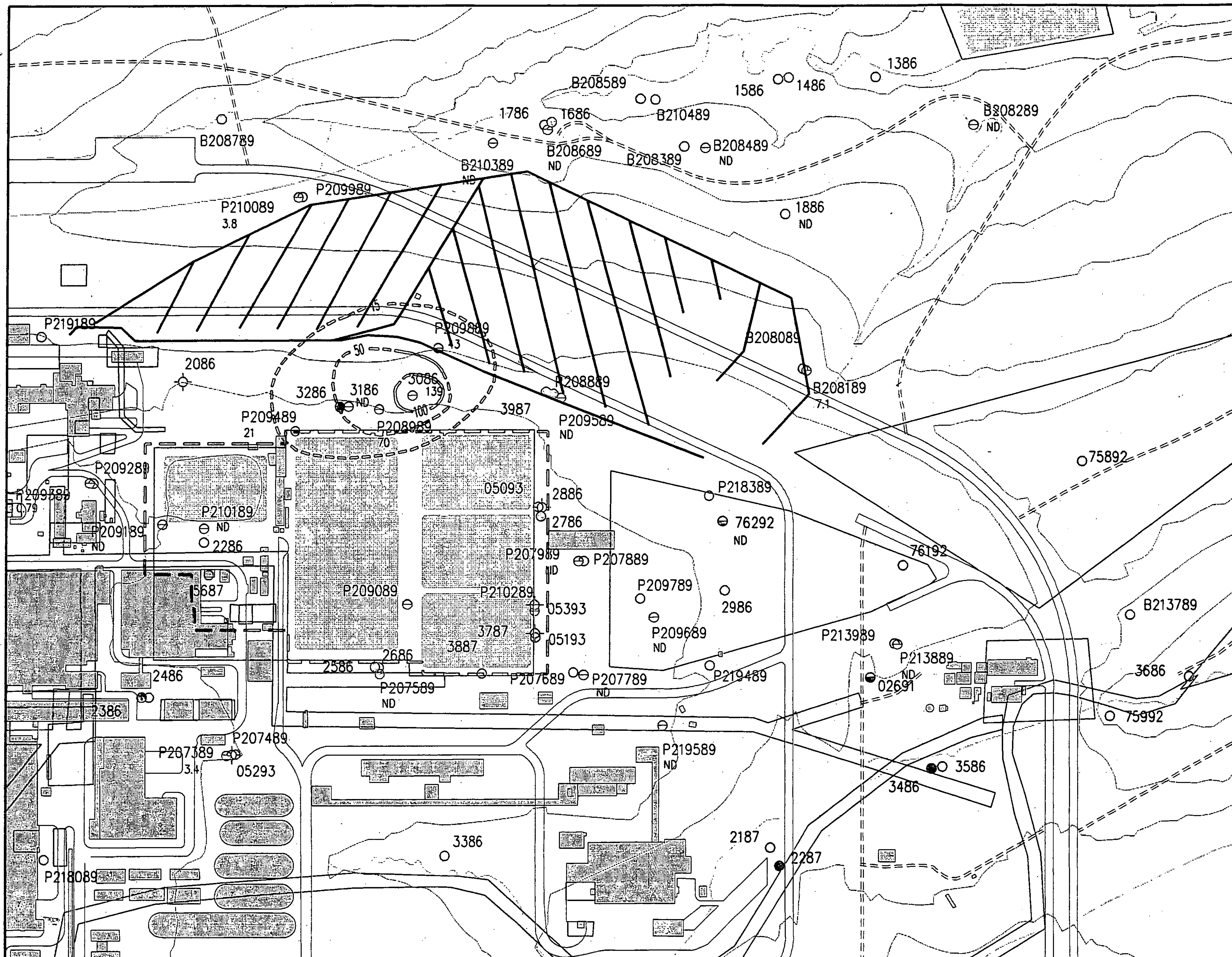
Solar Evaporation Ponds

1994 Annual RCRA Groundwater Monitoring Report

Dissolved Uranium-233/234 (pCi/L) in Groundwater
UHSU Surficial Materials, Second Quarter 1994

Figure 3-32
Date: February 20, 1995



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Intercepter Trench System
- Isoconcentration Contours (feet above MSL); Dashed Where Approximately Located
- ND No Data
- BDL Below Detection Limit
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Source: 1993 Annual RCRA Groundwater Monitoring Report

0 feet 250 500

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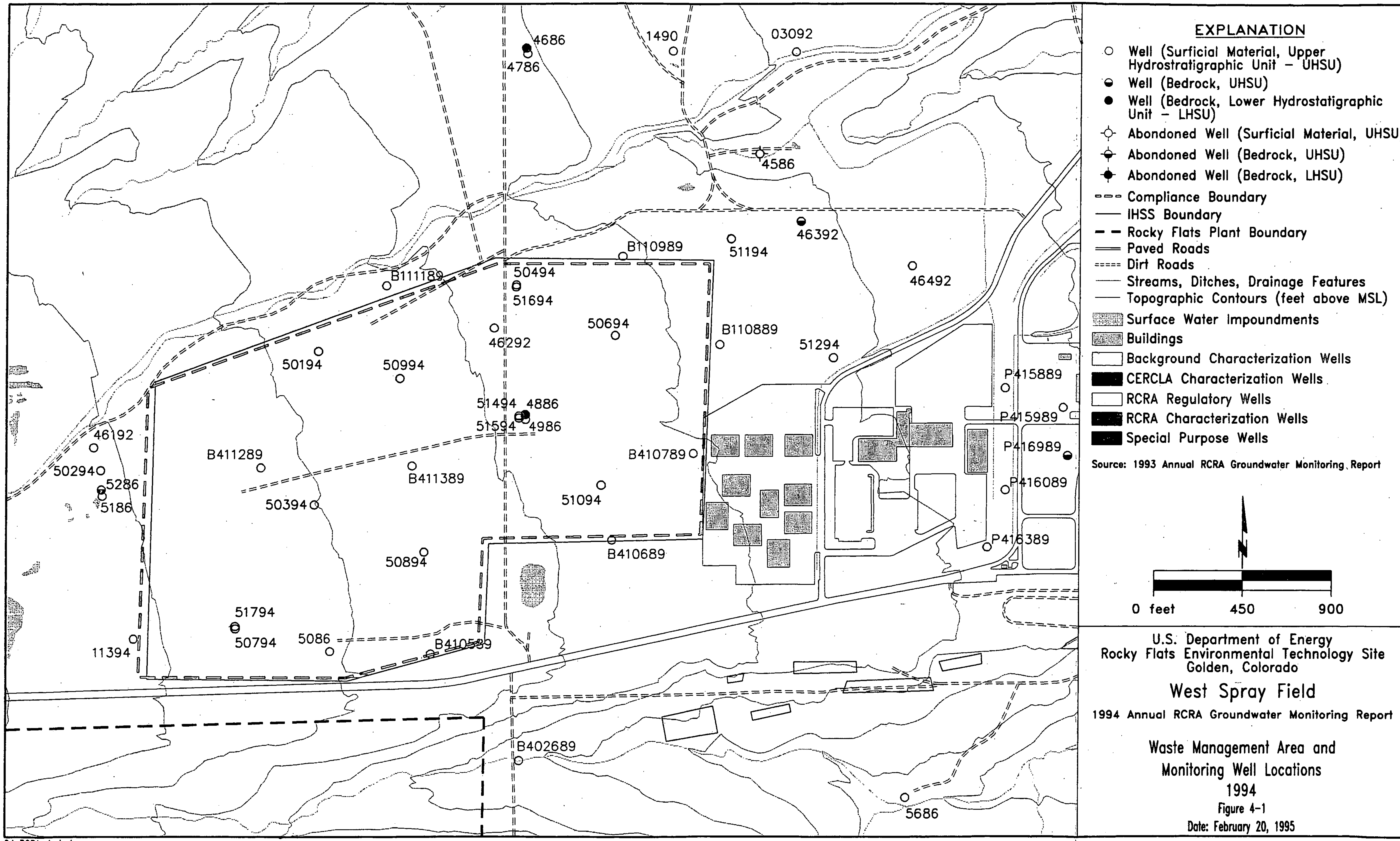
Solar Evaporation Ponds

1994 Annual RCRA Groundwater Monitoring Report

Dissolved Uranium-233/234 (pCi/L) in Groundwater
UHSU Bedrock, Second Quarter 1994

Figure 3-33
Date: February 20, 1995



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Rocky Flats Environmental Technology Site
Golden, Colorado

West Spray Field

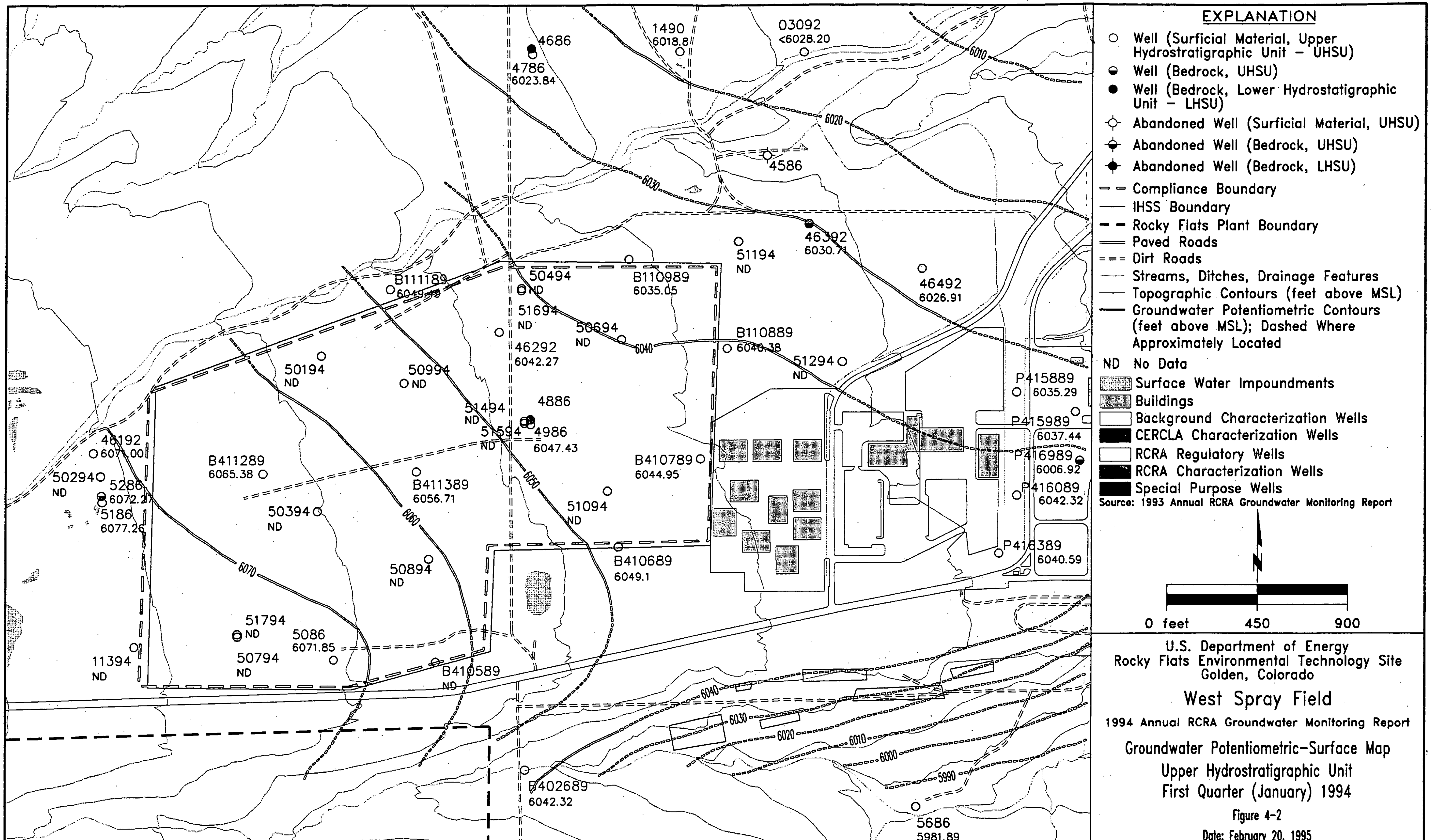
1994 Annual RCRA Groundwater Monitoring Report

Waste Management Area and Monitoring Well Locations 1994

Figure 4-1

Date: February 20, 1995

94 RCRA-A 4-1


EXPLANATION
Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
Well (Bedrock, UHSU)
Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
Abandoned Well (Surficial Material, UHSU)
Abandoned Well (Bedrock, UHSU)
Abandoned Well (Bedrock, LHSU)
Compliance Boundary
IHSS Boundary
Rocky Flats Plant Boundary
Paved Roads
Dirt Roads
Streams, Ditches, Drainage Features
Topographic Contours (feet above MSL)
Groundwater Potentiometric Contours (feet above MSL); Dashed Where Approximately Located
ND No Data
Surface Water Impoundments
Buildings
Background Characterization Wells
CERCLA Characterization Wells
RCRA Regulatory Wells
RCRA Characterization Wells
Special Purpose Wells
Source: 1993 Annual RCRA Groundwater Monitoring Report
0 feet 450 900
U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado
West Spray Field
1994 Annual RCRA Groundwater Monitoring Report
Groundwater Potentiometric-Surface Map
Upper Hydrostratigraphic Unit
First Quarter (January) 1994
Figure 4-2
Date: February 20, 1995
4686
4786
6023.84
1490
6018.8
03092
<6028.20
4586
46392
6030.71
51194
ND
46492
6026.91
B111189
6049.49
50494
ND
B110989
6035.05
51694
ND
50694
ND
46292
6042.27
B110889
6040.38
51294
ND
50194
ND
50994
ND
P415889
6035.29
P415989
6037.44
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6006.92
46192
6071.00
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6044.95
50294
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5286
6072.27
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6077.26
B411389
6056.71
P416089
6042.32
50394
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51094
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P416389
6040.59
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ND
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5086
6071.85
11394
ND
50794
ND
B410589
ND
B402689
6042.32
5686
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6010
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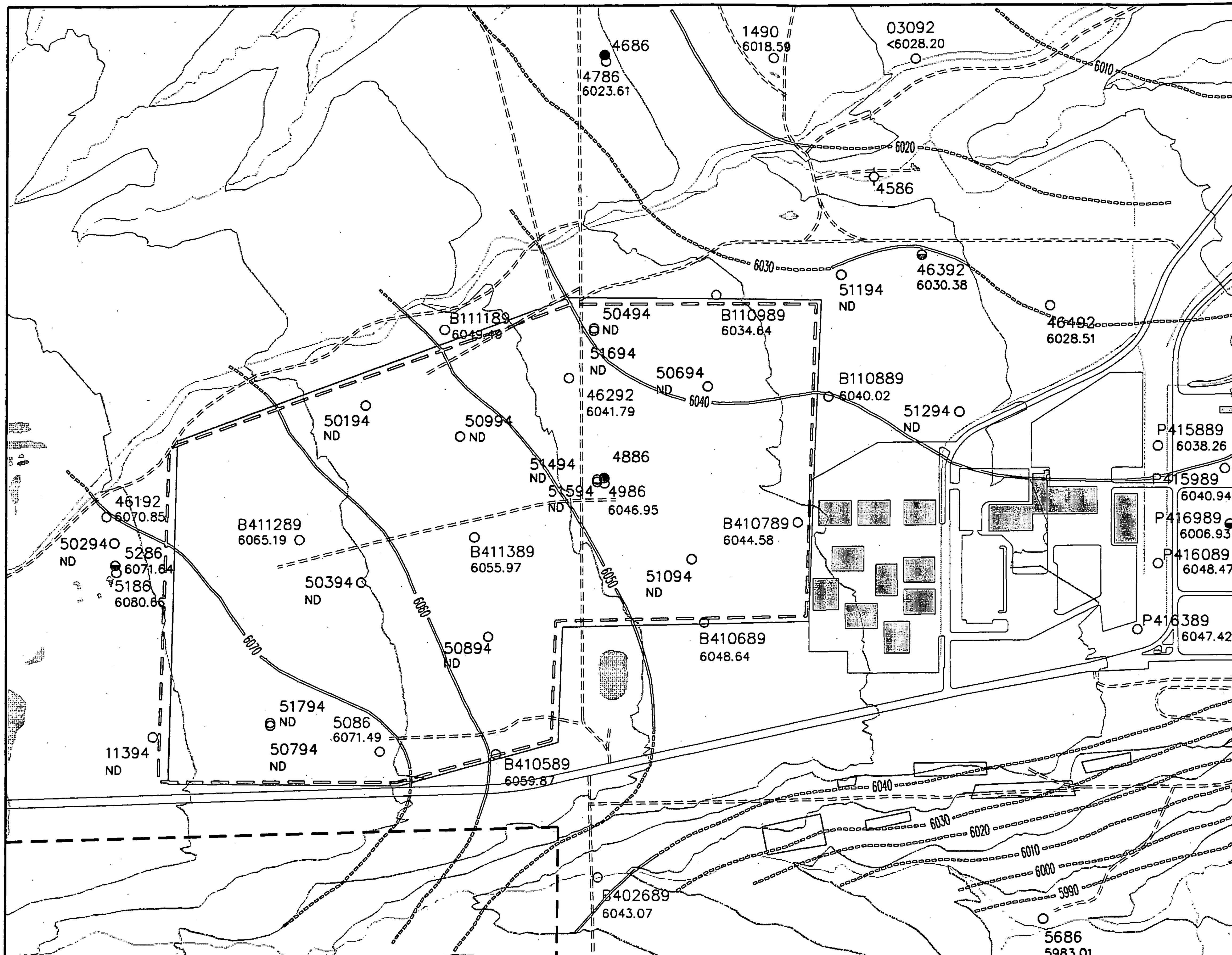
6030
6040
6050
6060
6070
6000
5990
94 RCRA-A 4-2



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Rocky Flats Plant Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Groundwater Potentiometric Contours (feet above MSL); Dashed Where Approximately Located

ND No Data

- Surface Water Impoundments
- Buildings
- Background Characterization Wells
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Source: 1993 Annual RCRA Groundwater Monitoring Report

0 feet 450 900

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Rocky Flats Environmental Technology Site
Golden, Colorado

West Spray Field

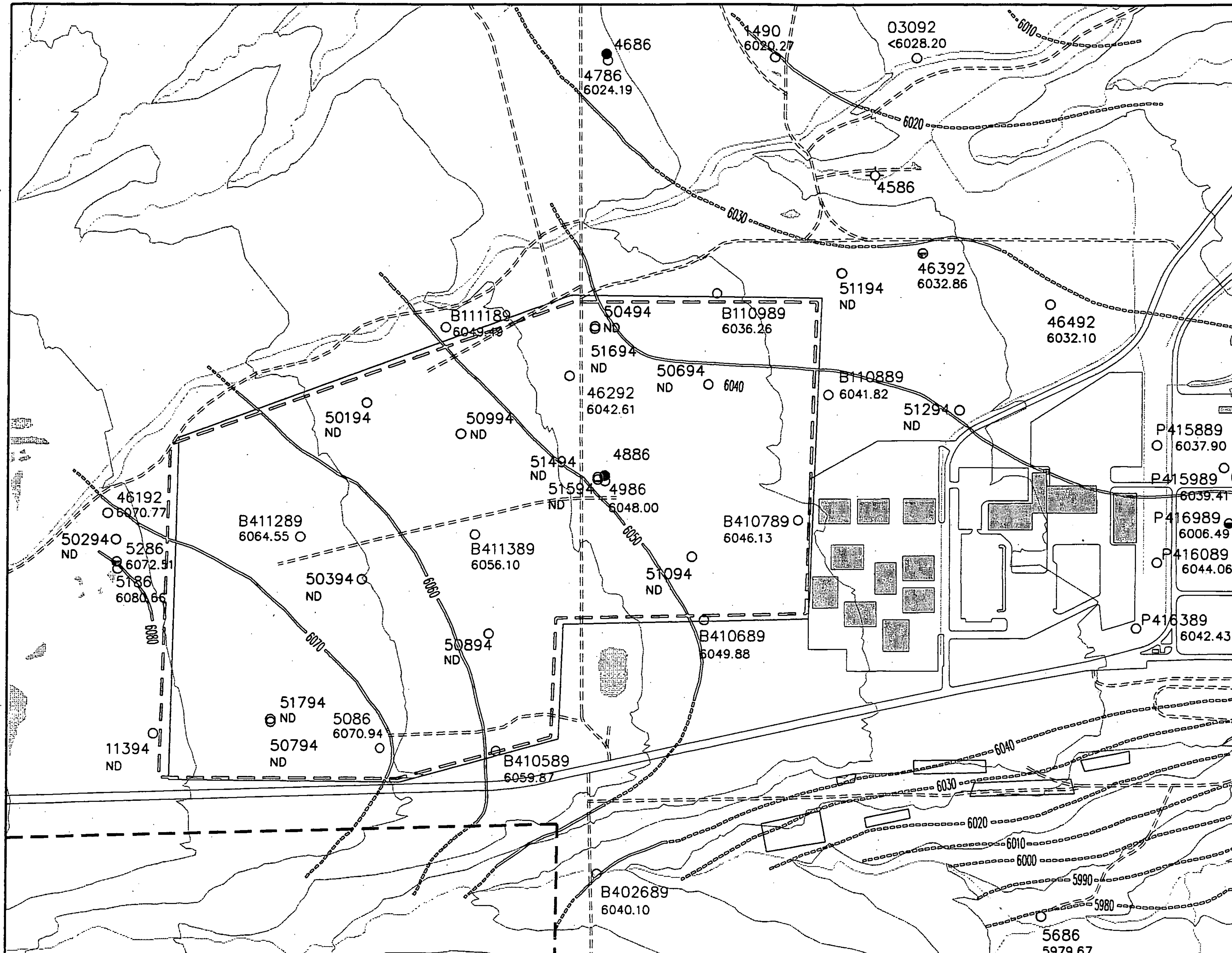
1994 Annual RCRA Groundwater Monitoring Report

Groundwater Potentiometric-Surface Map
Upper Hydrostratigraphic Unit
Second Quarter (April) 1994

Figure 4-3

Date: February 20, 1995

94 RCRA-A 4-3



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit - UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit - LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Rocky Flats Plant Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Groundwater Potentiometric Contours (feet above MSL); Dashed Where Approximately Located
- ND No Data
- Surface Water Impoundments
- Buildings
- Background Characterization Wells
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Source: 1993 Annual RCRA Groundwater Monitoring Report

0 feet 450 900

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Golden, Colorado

West Spray Field

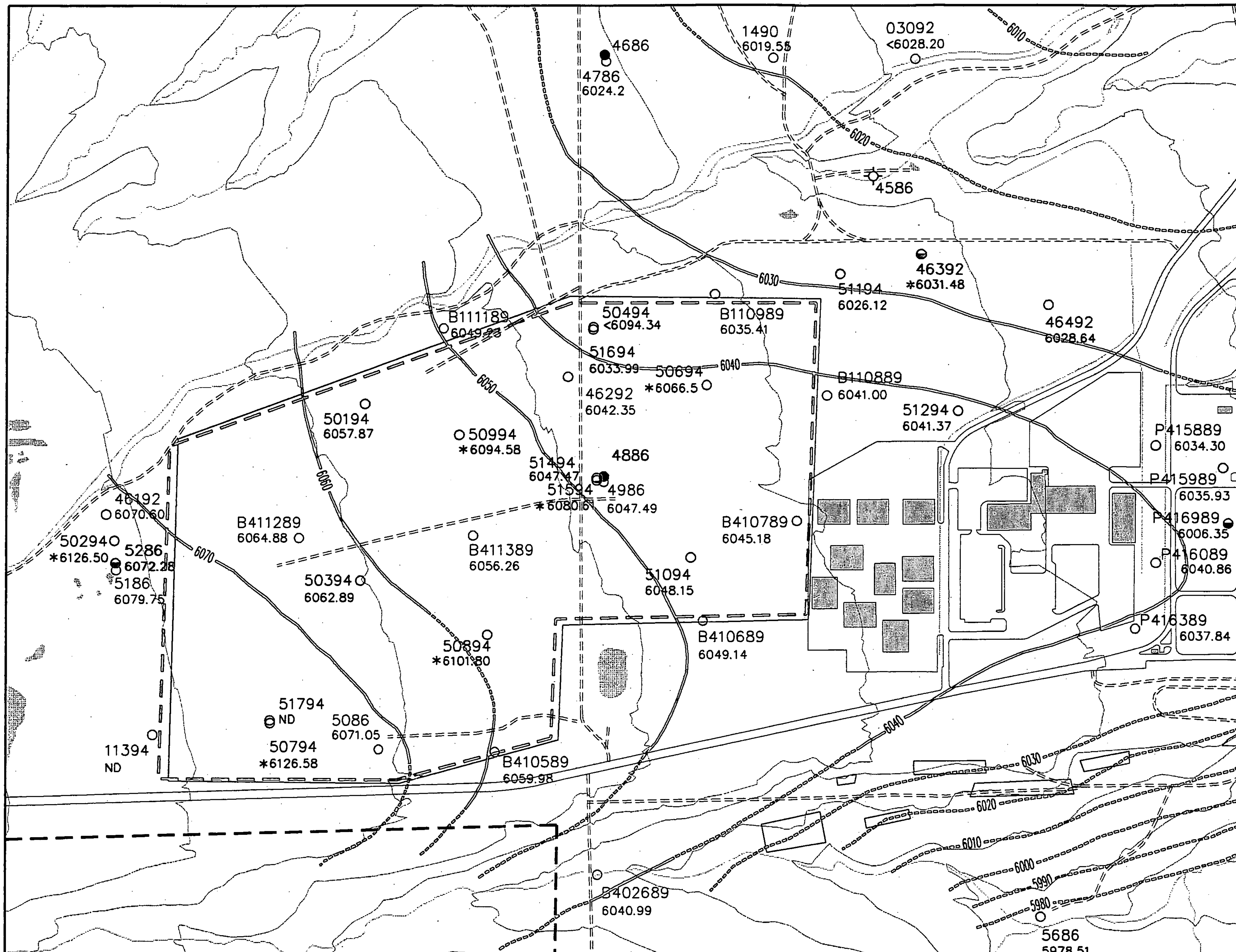
1994 Annual RCRA Groundwater Monitoring Report

Groundwater Potentiometric-Surface Map Upper Hydrostratigraphic Unit Third Quarter (July) 1994

Figure 4-4

Date: February 20, 1995

94 RCRA-A 4-4



EXPLANATION

- ○ Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- ◒ Well (Bedrock, UHSU)
- ● Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Rocky Flats Plant Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Groundwater Potentiometric Contours (feet above MSL); Dashed Where Approximately Located
- ND No Data
- Surface Water Impoundments
- Buildings
- Background Characterization Wells
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells
- * Not Contoured

Source: 1993 Annual RCRA Groundwater Monitoring Report

N

0 feet 450 900

U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado

West Spray Field

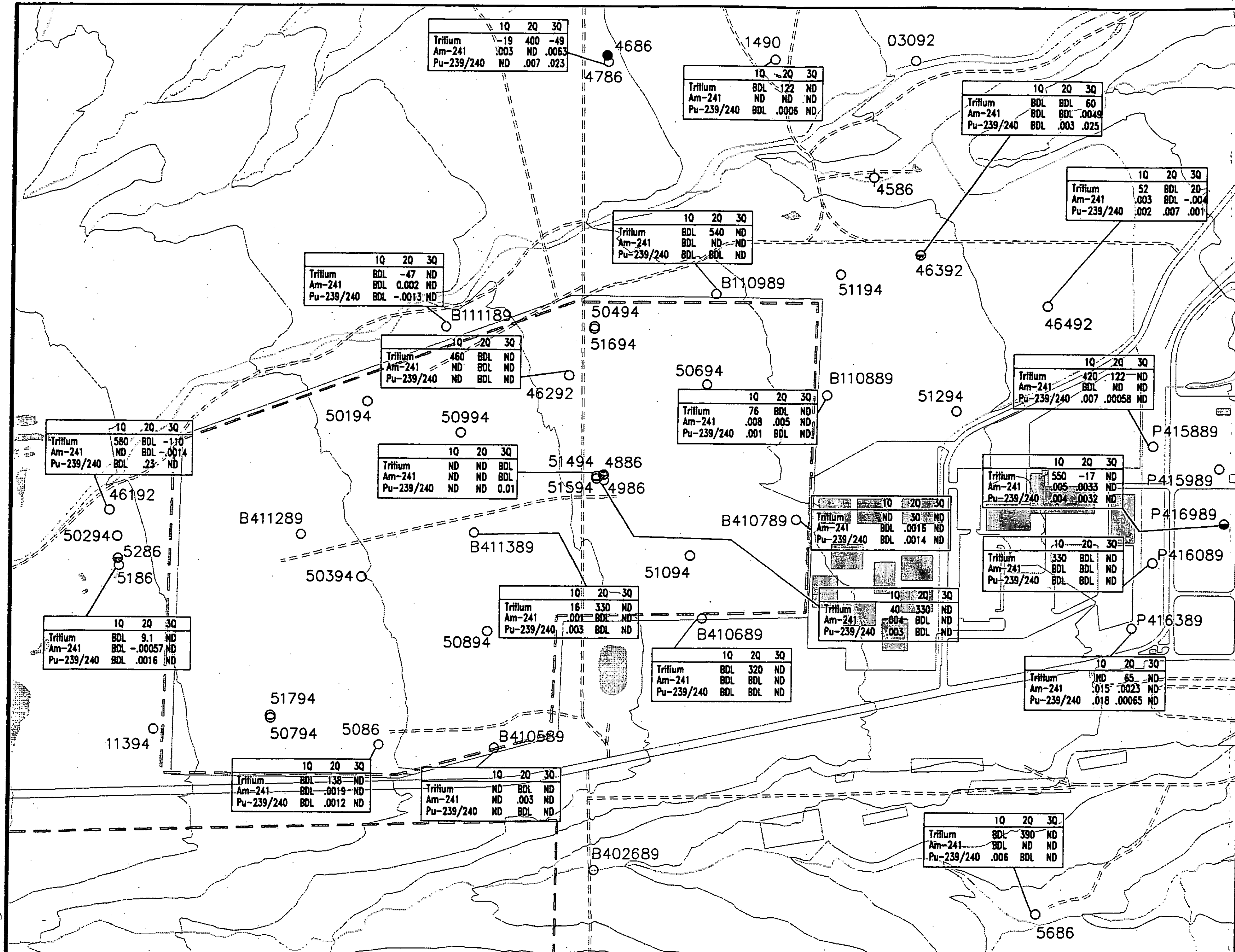
1994 Annual RCRA Groundwater Monitoring Report

Groundwater Potentiometric-Surface Map Upper Hydrostratigraphic Unit Fourth Quarter (October) 1994

Figure 4-5

Date: February 20, 1995

94 RCRA-A 4-5



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Rocky Flats Plant Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- ND No Data
- BDL Below Detection Limit
- Surface Water Impoundments
- Buildings
- Background Characterization Wells
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Values exceeding background activity (mean + 2 st. dev.) shown in red.

Source: 1993 Annual RCRA Groundwater Monitoring Report

0 feet 450 900

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Golden, Colorado

West Spray Field

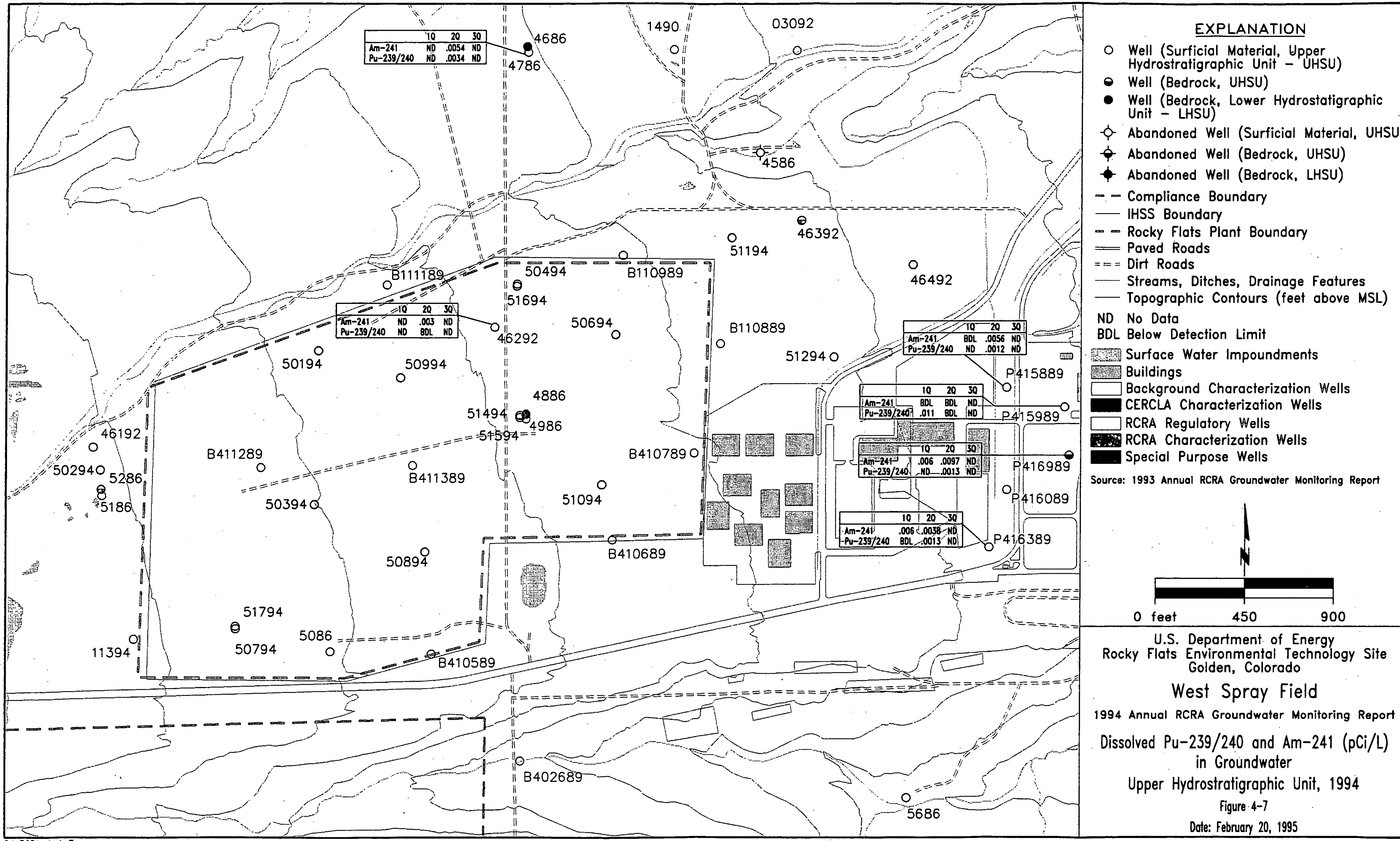
1994 Annual RCRA Groundwater Monitoring Report

Total Tritium, Am-241, Pu-239/240 (pCi/L) in Groundwater Upper Hydrostratigraphic Unit, 1994

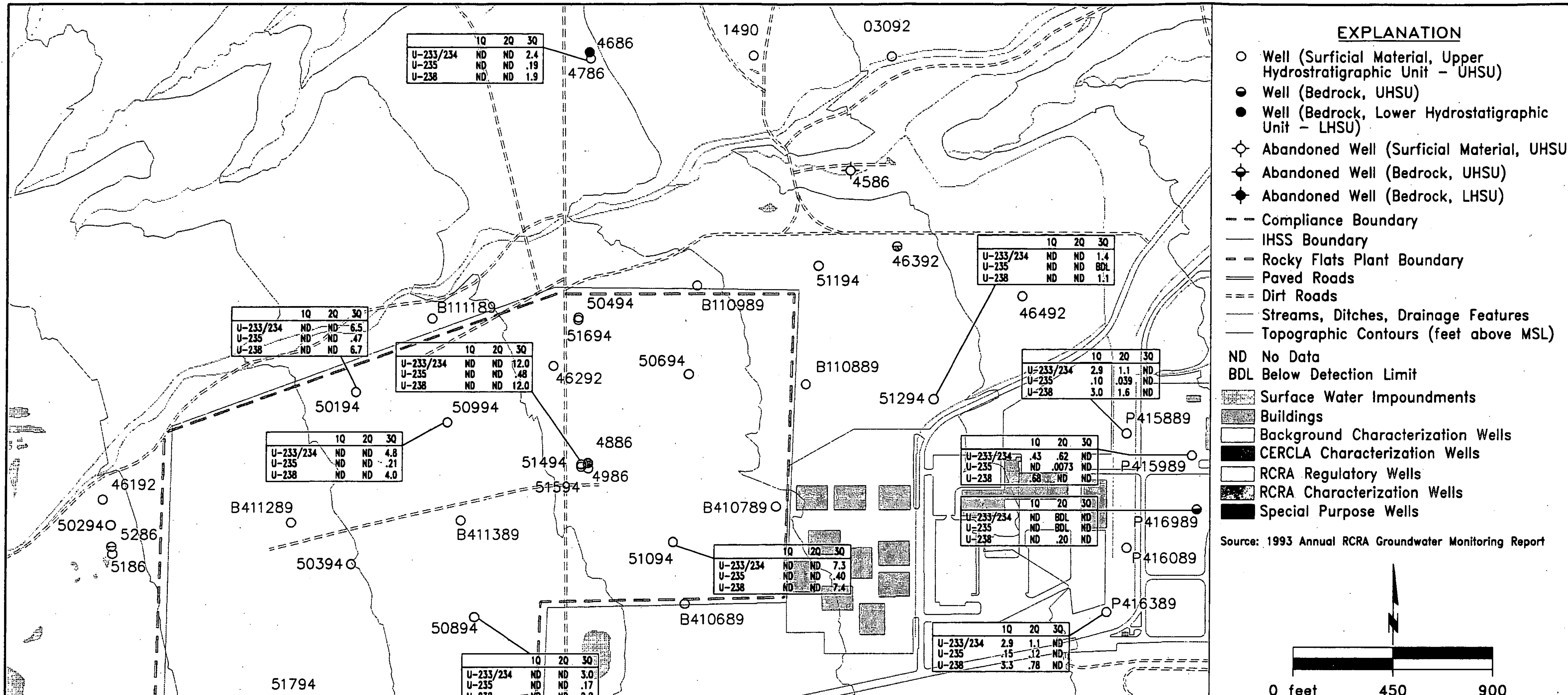
Figures 4-6

Date: February 20, 1995

94 RCRA-A 4-6



1Q 2Q 3Q
Am-241 ND .0054 ND
Pu-239/240 ND .0034 ND
4686
4786
1490
03092
4586
46392
51194
46492
B111189
50494
B110989
51694
1Q 2Q 3Q
Am-241 ND .003 ND
Pu-239/240 ND BDL ND
46292
50694
B110889
51294
50194
50994
1Q 2Q 3Q
Am-241 BDL .0056 ND
Pu-239/240 ND .0012 ND
P415889
1Q 2Q 3Q
Am-241 BDL BDL ND
Pu-239/240 .011 BDL ND
P415989
4886
51494
4986
51594
46192
B411289
B411389
B410789
1Q 2Q 3Q
Am-241 .006 .0097 ND
Pu-239/240 ND .0013 ND
P416989
50294
5286
5186
50394
51094
P416089
1Q 2Q 3Q
Am-241 .006 .0038 ND
Pu-239/240 BDL .0013 ND
P416389
B410689
50894
51794
50794
5086
11394
B410589
B402689
5686
EXPLANATION
Well (Surficial Material, Upper Hydrostratigraphic Unit - UHSU)
Well (Bedrock, UHSU)
Well (Bedrock, Lower Hydrostatigraphic Unit - LHSU)
Abandoned Well (Surficial Material, UHSU)
Abandoned Well (Bedrock, UHSU)
Abandoned Well (Bedrock, LHSU)
Compliance Boundary
IHSS Boundary
Rocky Flats Plant Boundary
Paved Roads
Dirt Roads
Streams, Ditches, Drainage Features
Topographic Contours (feet above MSL)
ND No Data
BDL Below Detection Limit
Surface Water Impoundments
Buildings
Background Characterization Wells
CERCLA Characterization Wells
RCRA Regulatory Wells
RCRA Characterization Wells
Special Purpose Wells
Source: 1993 Annual RCRA Groundwater Monitoring Report
N
0 feet 450 900
U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado
West Spray Field
1994 Annual RCRA Groundwater Monitoring Report
Dissolved Pu-239/240 and Am-241 (pCi/L) in Groundwater
Upper Hydrostratigraphic Unit, 1994
Figure 4-7
Date: February 20, 1995



U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado

West Spray Field

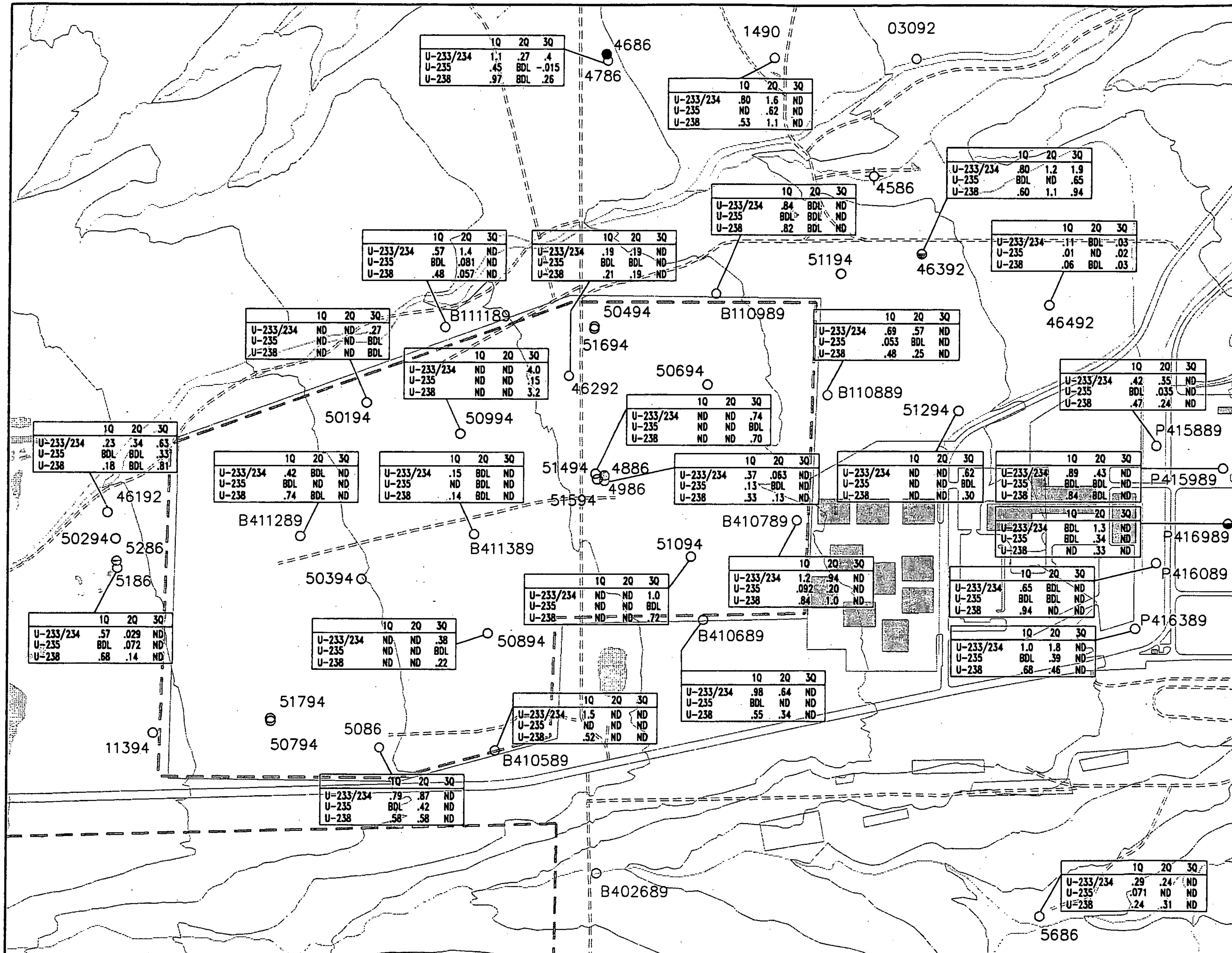
1994 Annual RCRA Groundwater Monitoring Report

Total U-233/234, U-235, and U-238 (pCi/L) in Groundwater Upper Hydrostratigraphic Unit, 1994

Figure 4-8

Date: February 20, 1995

94 RCRA-A 4-8



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Rocky Flats Plant Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- ND No Data
- BDL Below Detection Limit
- Surface Water Impoundments
- Buildings
- Background Characterization Wells
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Source: 1993 Annual RCRA Groundwater Monitoring Report

0 feet 450 900

U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado

West Spray Field

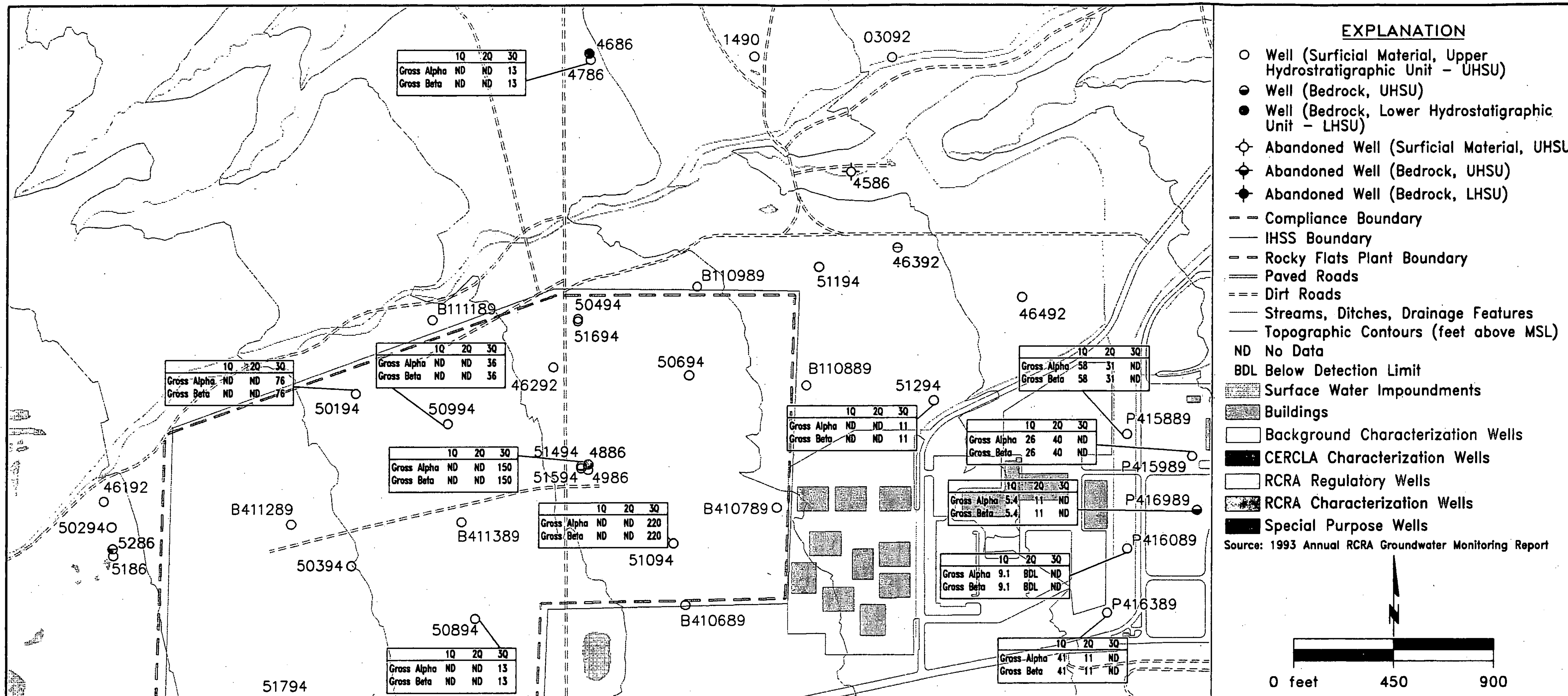
1994 Annual RCRA Groundwater Monitoring Report

Dissolved U-233/234, U-235, and U-238 (pCi/L) in Groundwater Upper Hydrostratigraphic Unit, 1994

Figure 4-9

Date: February 20, 1995

94 RCRA-A 4-9



U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado

West Spray Field

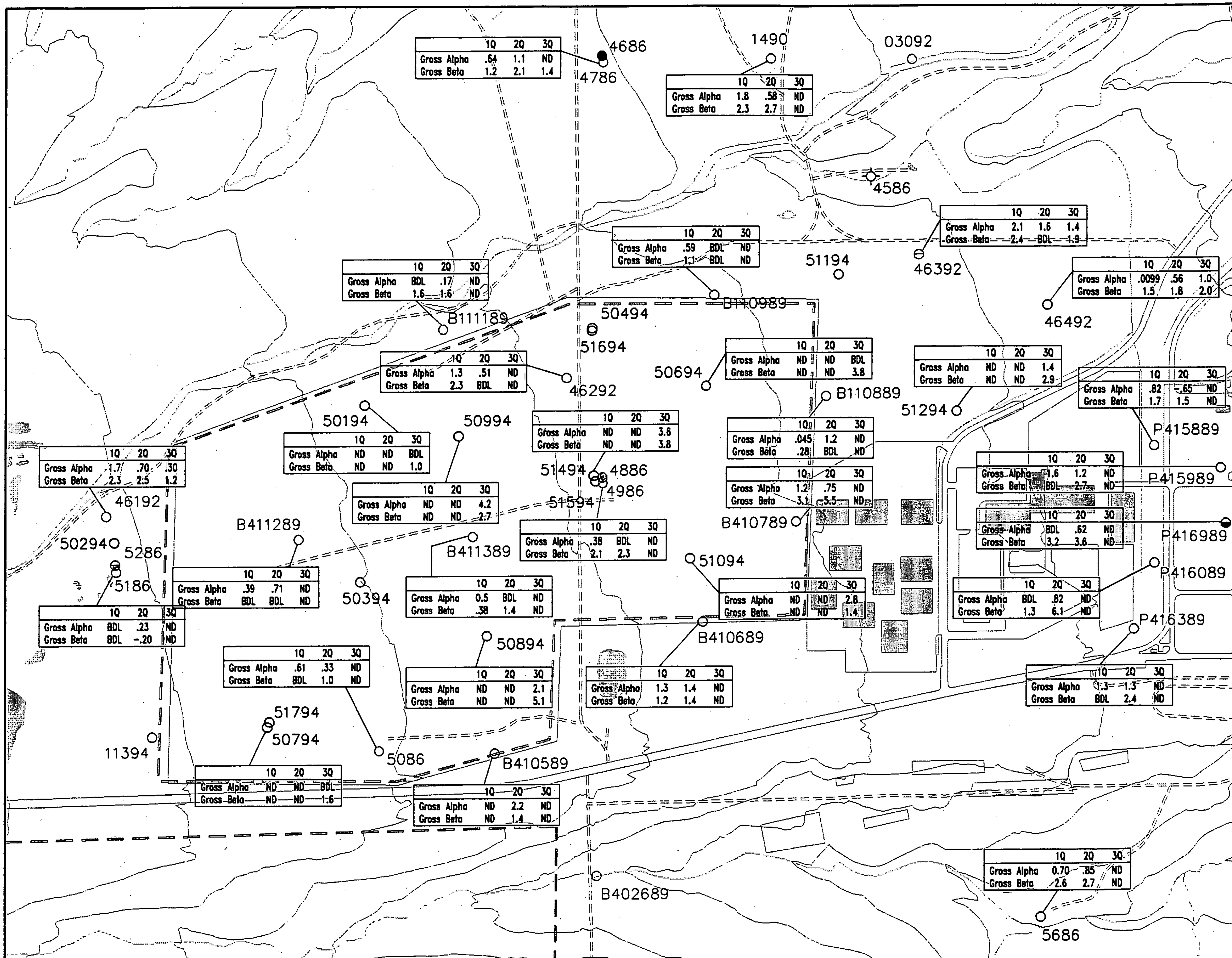
1994 Annual RCRA Groundwater Monitoring Report

Total Gross Alpha and Gross Beta (pCi/L) in Groundwater Upper Hydrostratigraphic Unit, 1994

Figure 4-10

Date: February 20, 1995

94 RCRA-A 4-10



EXPLANATION

- ○ Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- ● Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Rocky Flats Plant Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- ND No Data
- BDL Below Detection Limit
- Surface Water Impoundments
- Buildings
- Background Characterization Wells
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Source: 1993 Annual RCRA Groundwater Monitoring Report

0 feet 450 900

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Rocky Flats Environmental Technology Site
Golden, Colorado

West Spray Field

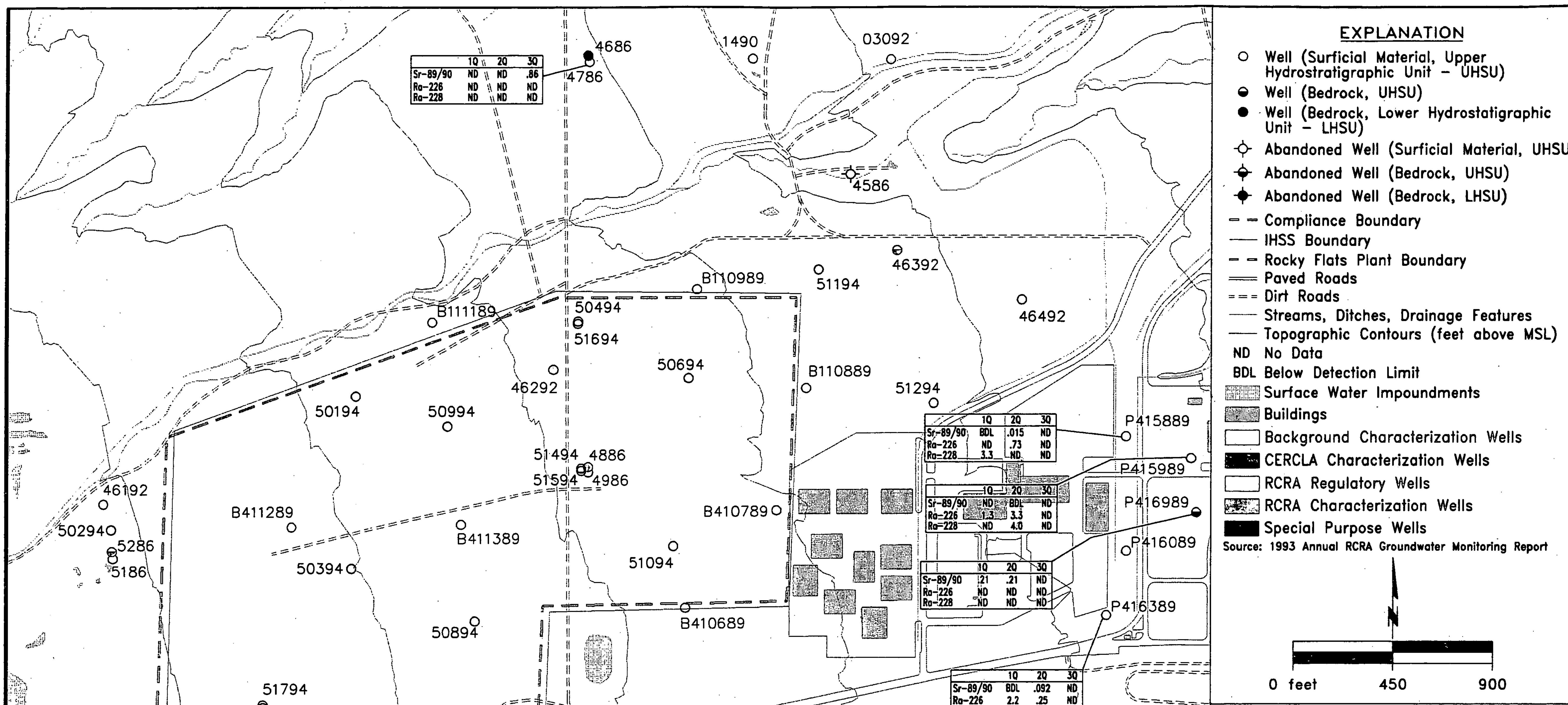
1994 Annual RCRA Groundwater Monitoring Report

Dissolved Gross Alpha and Gross Beta (pCi/L) in Groundwater
Upper Hydrostratigraphic Unit, 1994

Figure 4-11

Date: February 20, 1995

94 RCRA-A 4-11



	1Q	2Q	3Q
Sr-89/90	ND	ND	.86
Ra-226	ND	ND	ND
Ra-228	ND	ND	ND

	1Q	2Q	3Q
Sr-89/90	BDL	.015	ND
Ra-226	ND	.73	ND
Ra-228	3.3	ND	ND

	1Q	2Q	3Q
Sr-89/90	ND	BDL	ND
Ra-226	1.3	3.3	ND
Ra-228	ND	4.0	ND

	1Q	2Q	3Q
Sr-89/90	.21	.21	ND
Ra-226	ND	ND	ND
Ra-228	ND	ND	ND

	1Q	2Q	3Q
Sr-89/90	BDL	.092	ND
Ra-226	2.2	.25	ND
Ra-228	ND	ND	ND

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Golden, Colorado

West Spray Field

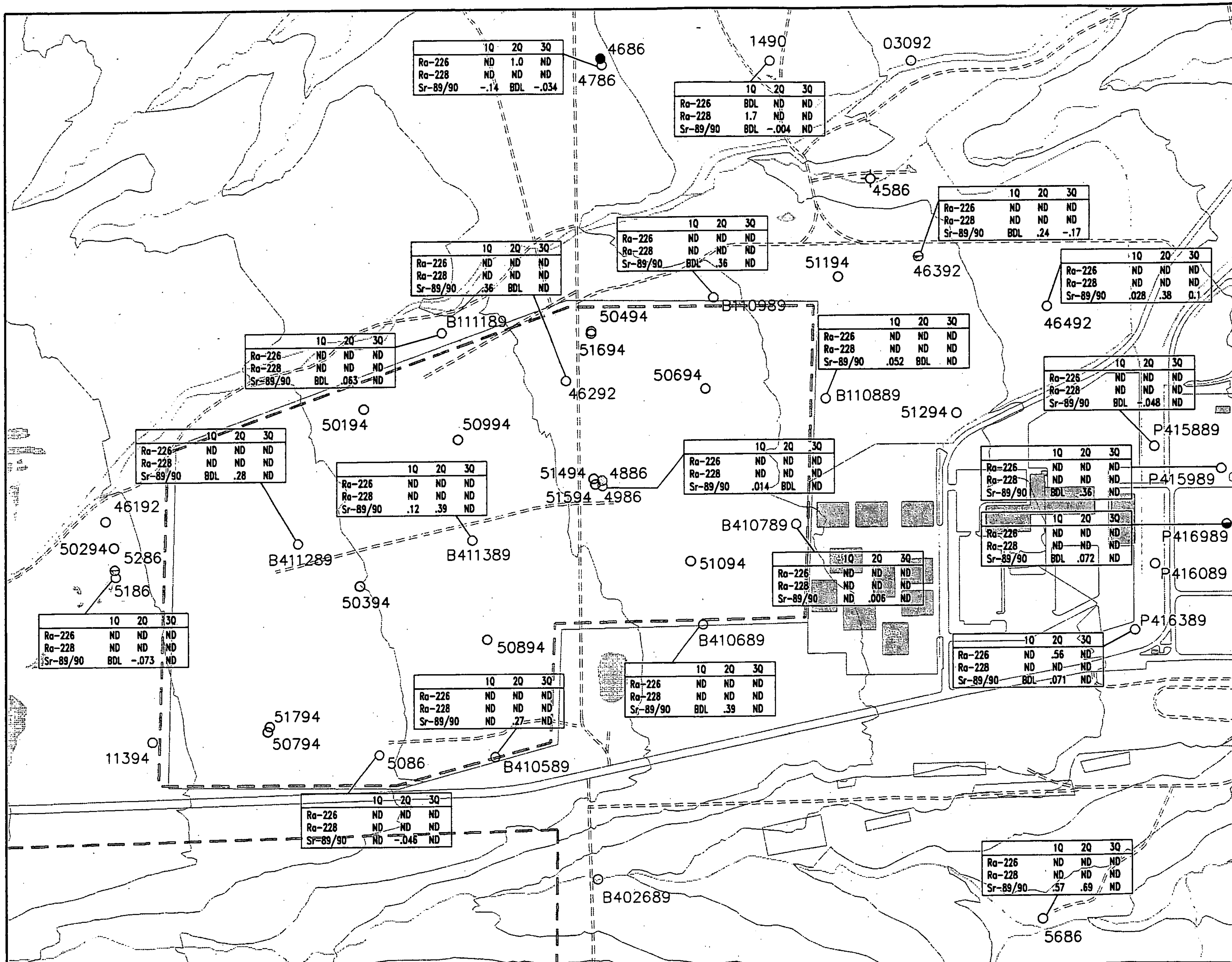
1994 Annual RCRA Groundwater Monitoring Report

Total Sr-89/90, Ra-226, and Ra-228 (pCi/L) in Groundwater
Upper Hydrostratigraphic Unit, 1994

Figure 4-12

Date: February 20, 1995

94 RCRA-A 4-12



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Rocky Flats Plant Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- ND No Data
- BDL Below Detection Limit
- Surface Water Impoundments
- Buildings
- Background Characterization Wells
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Values exceeding background activity (mean + 2 st. dev.) shown in red.

Source: 1993 Annual RCRA Groundwater Monitoring Report

0 feet 450 900

U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado

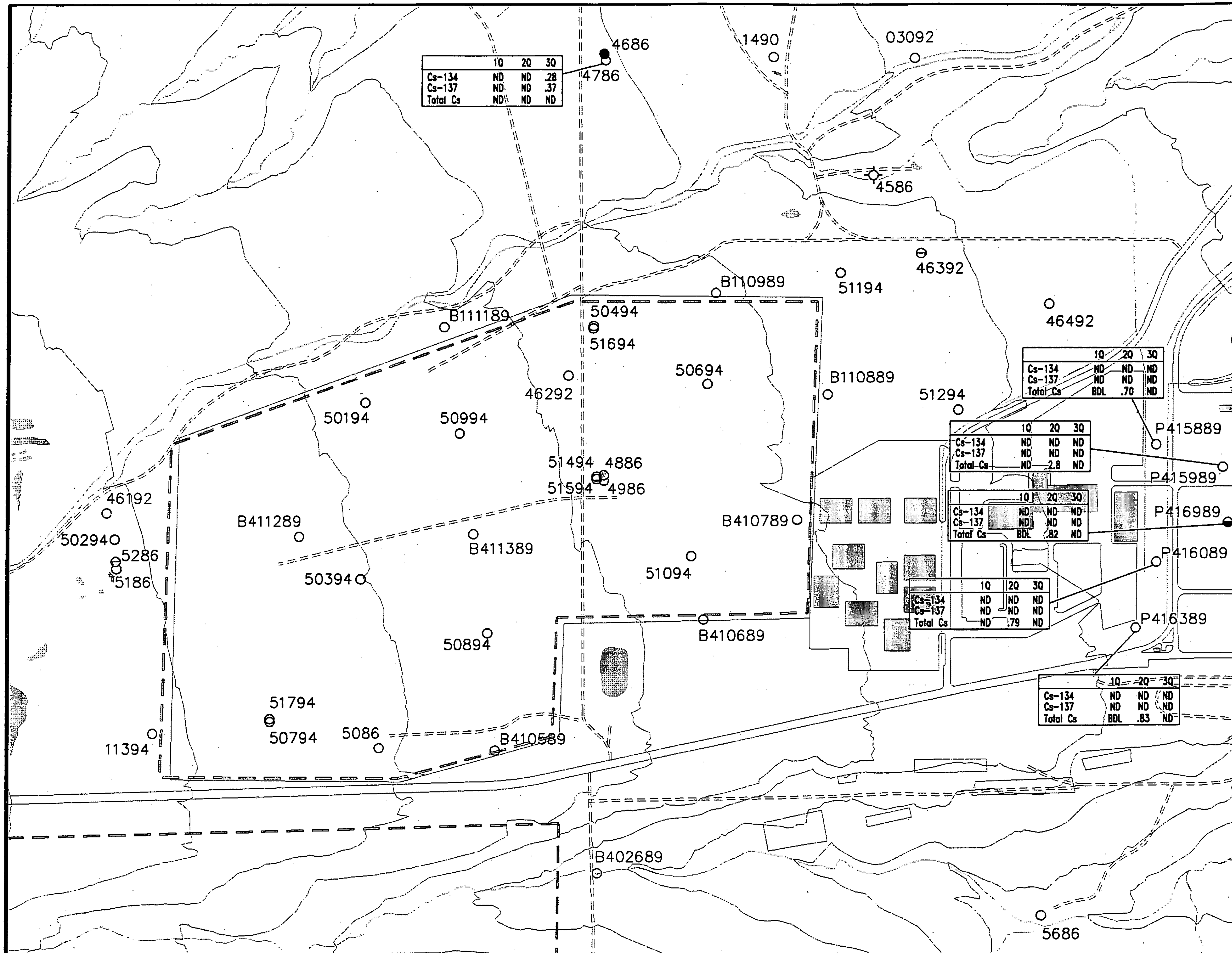
West Spray Field

1994 Annual RCRA Groundwater Monitoring Report

Dissolved Ra-226, Ra-228, and Sr-89/90 (pCi/L) in Groundwater Upper Hydrostratigraphic Unit, 1994

Figure 4-13

Date: February 20, 1995



	1Q	2Q	3Q
Cs-134	ND	ND	.28
Cs-137	ND	ND	.37
Total Cs	ND	ND	ND

	1Q	2Q	3Q
Cs-134	ND	ND	ND
Cs-137	ND	ND	ND
Total Cs	BDL	.70	ND

	1Q	2Q	3Q
Cs-134	ND	ND	ND
Cs-137	ND	ND	ND
Total Cs	ND	2.8	ND

	1Q	2Q	3Q
Cs-134	ND	ND	ND
Cs-137	ND	ND	ND
Total Cs	BDL	.82	ND

	1Q	2Q	3Q
Cs-134	ND	ND	ND
Cs-137	ND	ND	ND
Total Cs	ND	.79	ND

	1Q	2Q	3Q
Cs-134	ND	ND	ND
Cs-137	ND	ND	ND
Total Cs	BDL	.83	ND

EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Rocky Flats Plant Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
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- Surface Water Impoundments
- Buildings
- Background Characterization Wells
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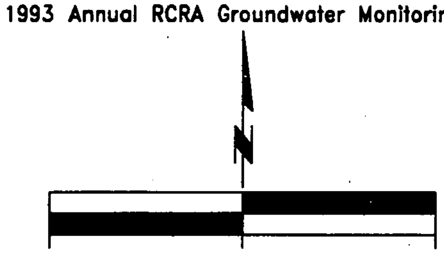
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Source: 1993 Annual RCRA Groundwater Monitoring Report



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Rocky Flats Environmental Technology Site
Golden, Colorado

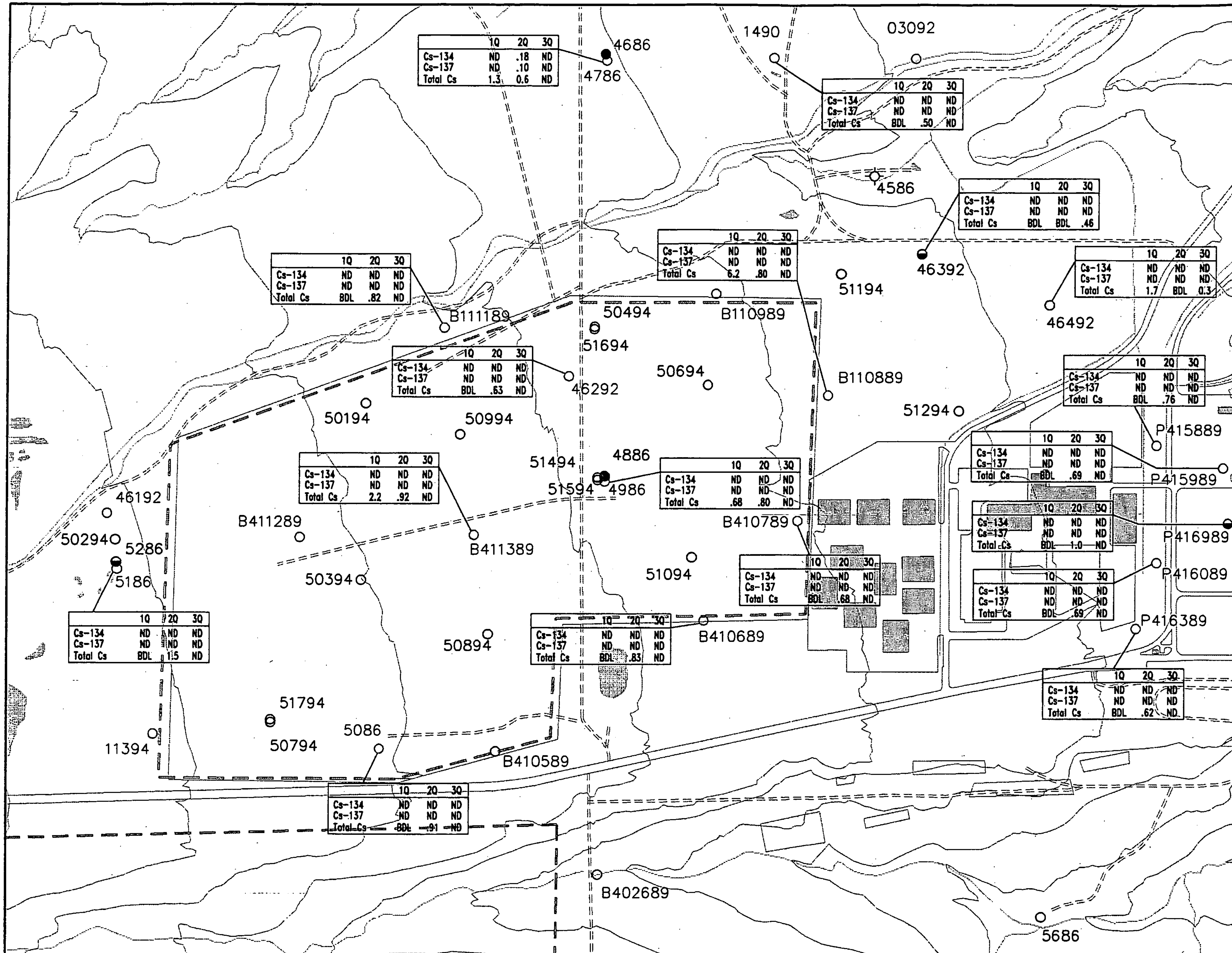
West Spray Field

1994 Annual RCRA Groundwater Monitoring Report

Total Cs-134, Cs-137, and Radiocesium (pCi/L) in Groundwater
Upper Hydrostratigraphic Unit, 1994

Figure 4-14

Date: February 20, 1995



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Rocky Flats Plant Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- ND No Data
- BDL Below Detection Limit
- Surface Water Impoundments
- Buildings
- Background Characterization Wells
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Source: 1993 Annual RCRA Groundwater Monitoring Report

N

0 feet 450 900

U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado

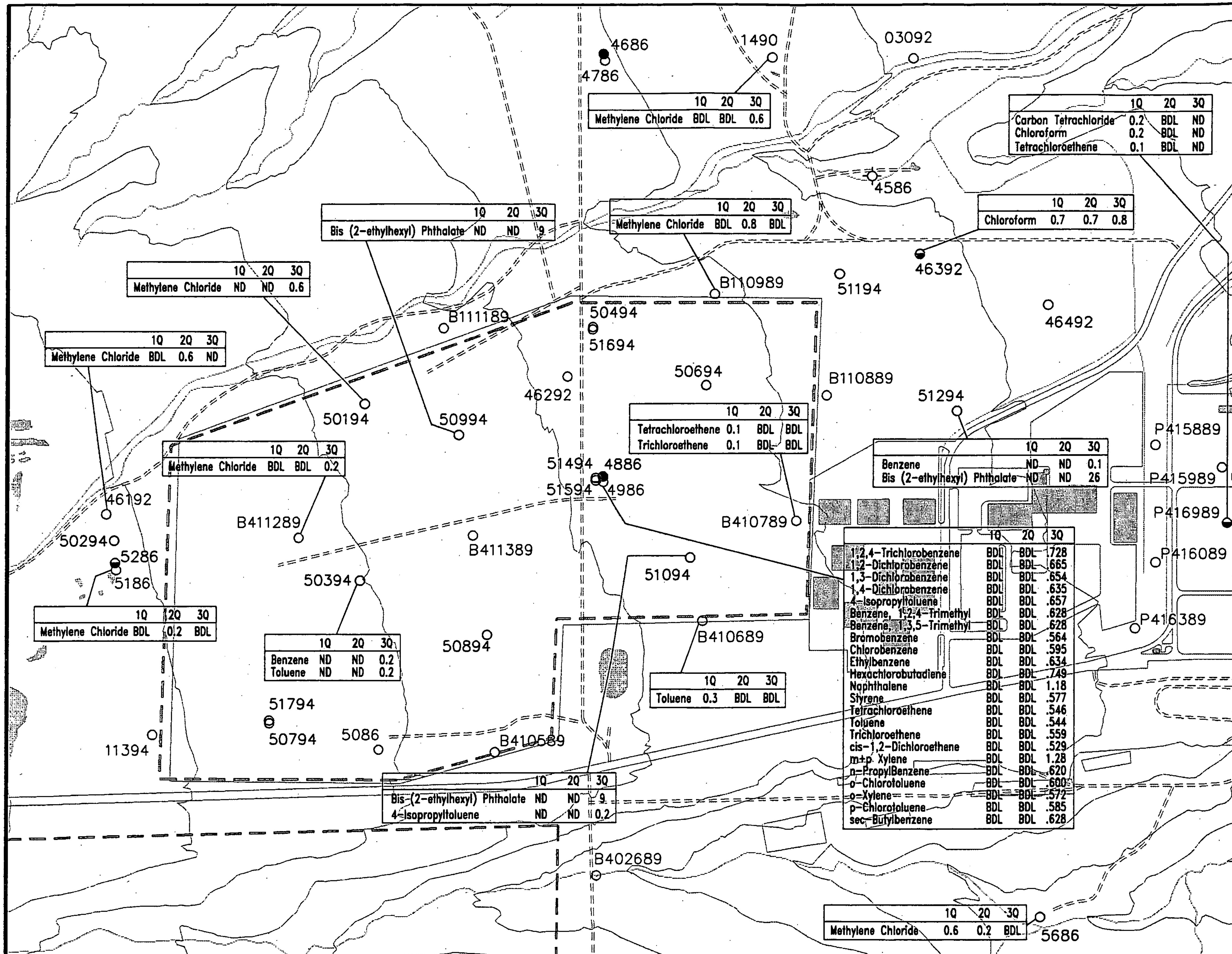
West Spray Field

1994 Annual RCRA Groundwater Monitoring Report

Dissolved Cs-134, Cs-137, and Total Radiocesium (pCi/L) in Groundwater
Upper Hydrostratigraphic Unit, 1994

Figures 4-15
Date: February 20, 1995

94 RCRA-A 4-15



EXPLANATION

- ○ Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- ● Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Rocky Flats Plant Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- ND No Data
- Surface Water Impoundments
- Buildings
- Background Characterization Wells
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Source: 1993 Annual RCRA Groundwater Monitoring Report

0 feet 450 900

U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado

West Spray Field

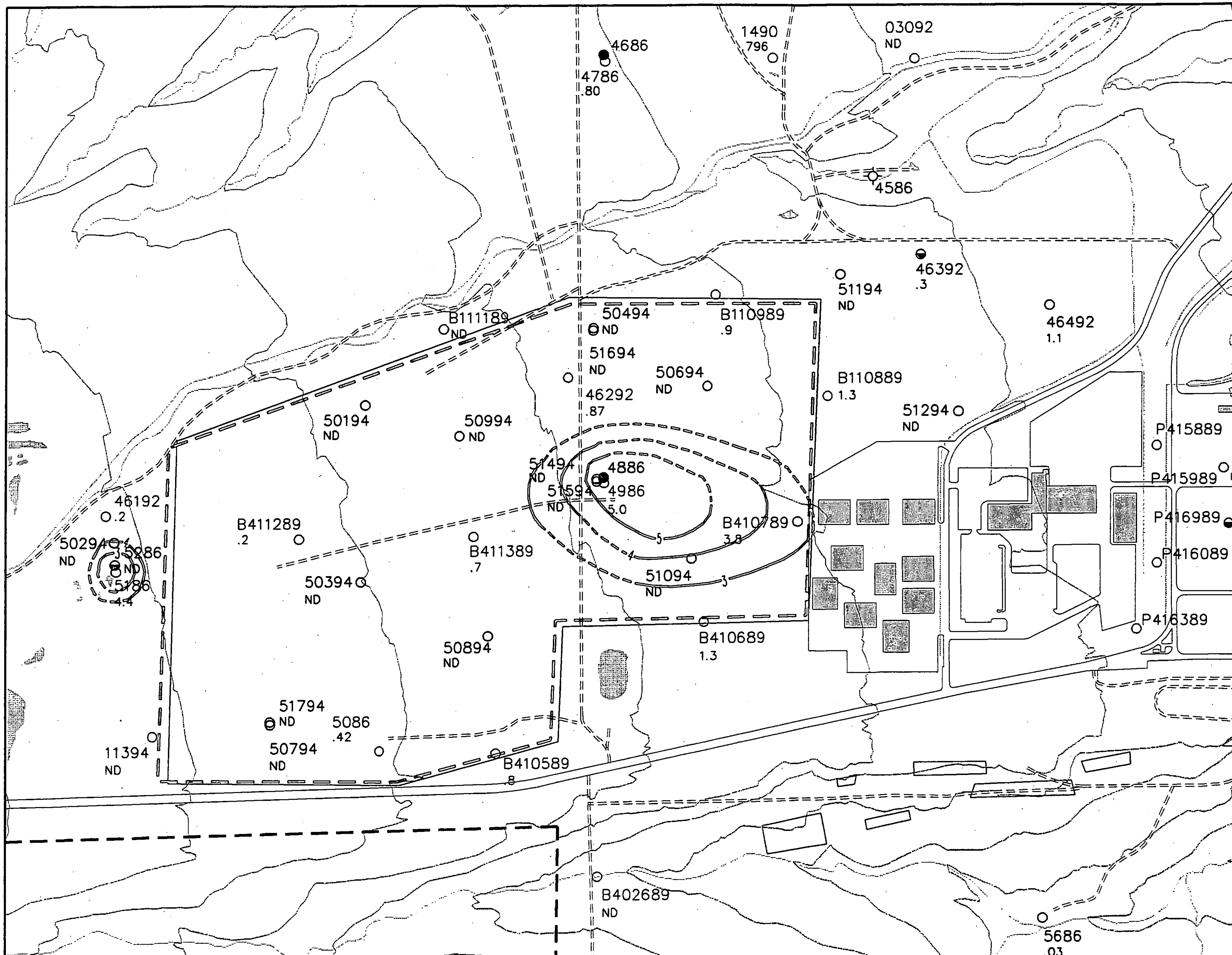
1994 Annual RCRA Groundwater Monitoring Report

Organic Compounds (mg/L)
in Groundwater
Upper Hydrostratigraphic Unit, 1994

Figure 4-16

Date: February 20, 1995

94 RCRA-A 4-16



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Rocky Flats Plant Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Isoconcentration Contours; Dashed Where Approximately Located
- ND No Data
- BDL Below Detection Limit
- Surface Water Impoundments
- Buildings
- Background Characterization Wells
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Source: 1993 Annual RCRA Groundwater Monitoring Report

0 feet 450 900

U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado

West Spray Field

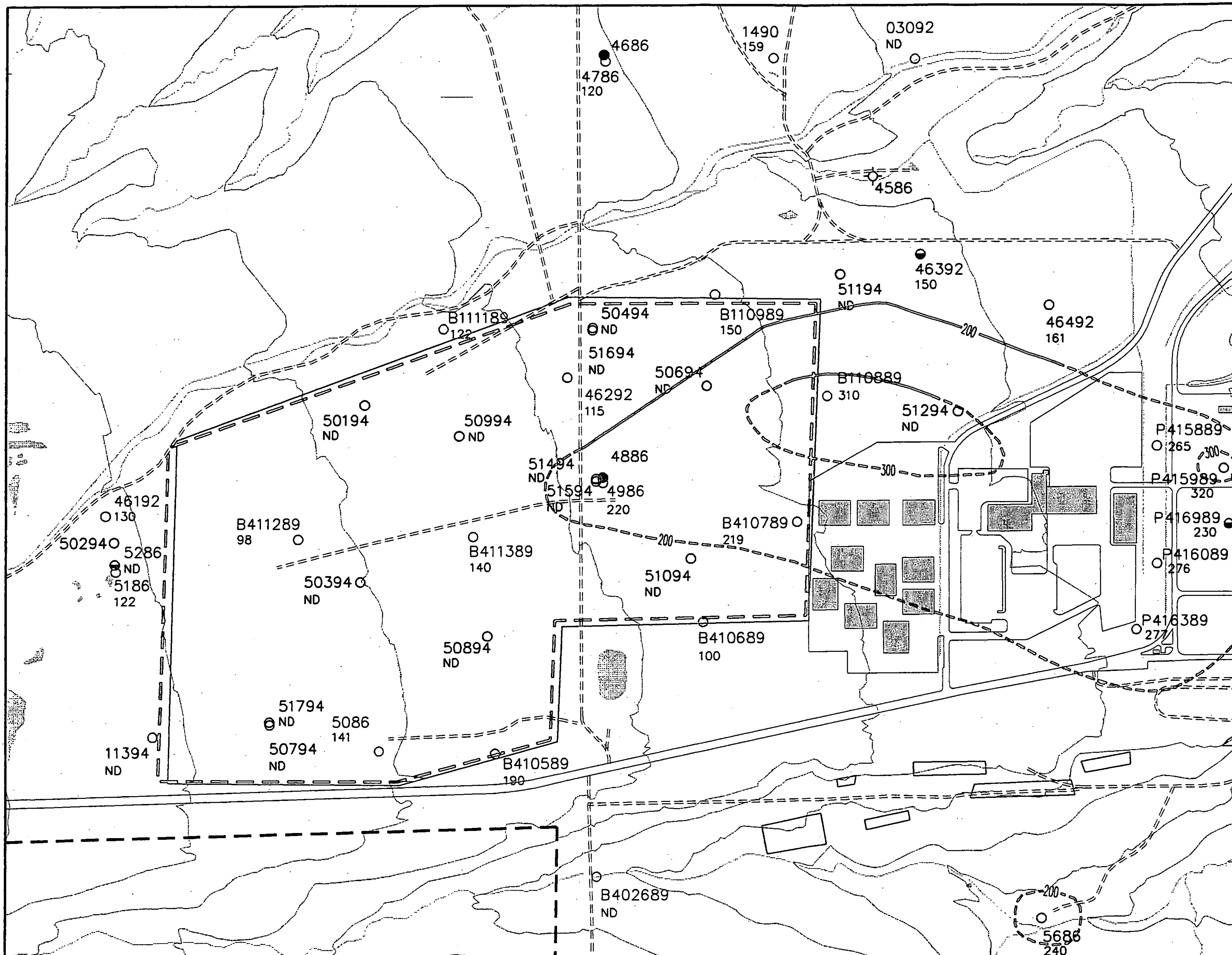
1994 Annual RCRA Groundwater Monitoring Report

Nitrate plus Nitrite (mg/L)
in Groundwater
UHSU, Second Quarter 1994

Figure 4-17

Date: February 20, 1995

94 RCRA-A 4-17



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Rocky Flats Plant Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Isoconcentration Contours; Dashed Where Approximately Located
- ND No Data
- BDL Below Detection Limit
- Surface Water Impoundments
- Buildings
- Background Characterization Wells
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells
- Special Purpose Wells

Source: 1993 Annual RCRA Groundwater Monitoring Report

0 feet 450 900

U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado

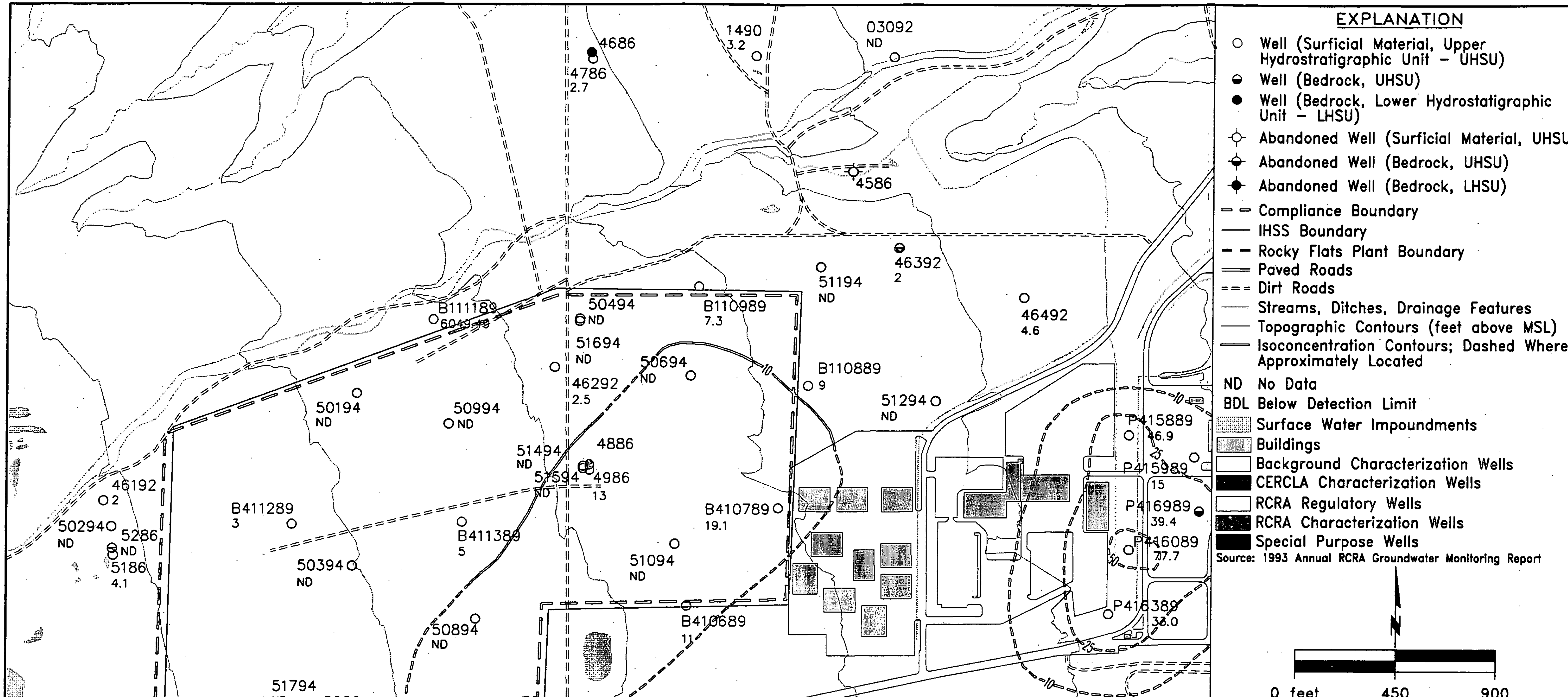
West Spray Field

1994 Annual RCRA Groundwater Monitoring Report

Total Dissolved Solids (mg/L)
in Groundwater
UHSU, Second Quarter 1994

Figure 4-18

Date: February 20, 1995



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Rocky Flats Environmental Technology Site
Golden, Colorado

West Spray Field

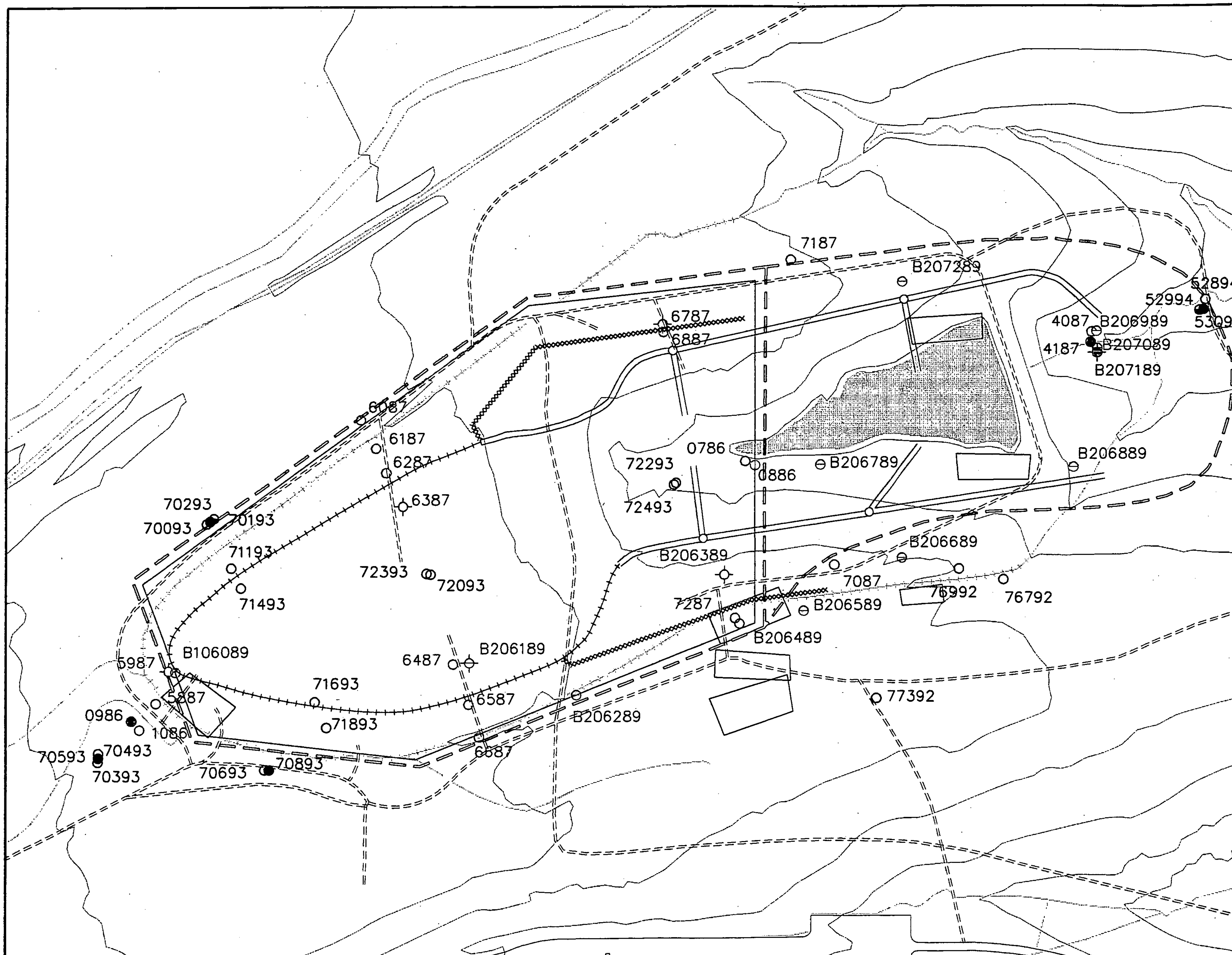
1994 Annual RCRA Groundwater Monitoring Report

Chloride (mg/L)
in Groundwater
UHSU, Second Quarter 1994

Figure 4-19

Date: February 20, 1995

94 RCRA-A 4-19



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abondoned Well (Surficial Material, UHSU)
- Abondoned Well (Bedrock, UHSU)
- Abondoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Surface Water Diversion Ditch
- Slurry Wall
- Groundwater Intercept System (perforated)
- Groundwater Intercept System (unperf.)
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells

Source: 1993 Annual RCRA Groundwater Monitoring Report

N

0 feet 250 500

U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado

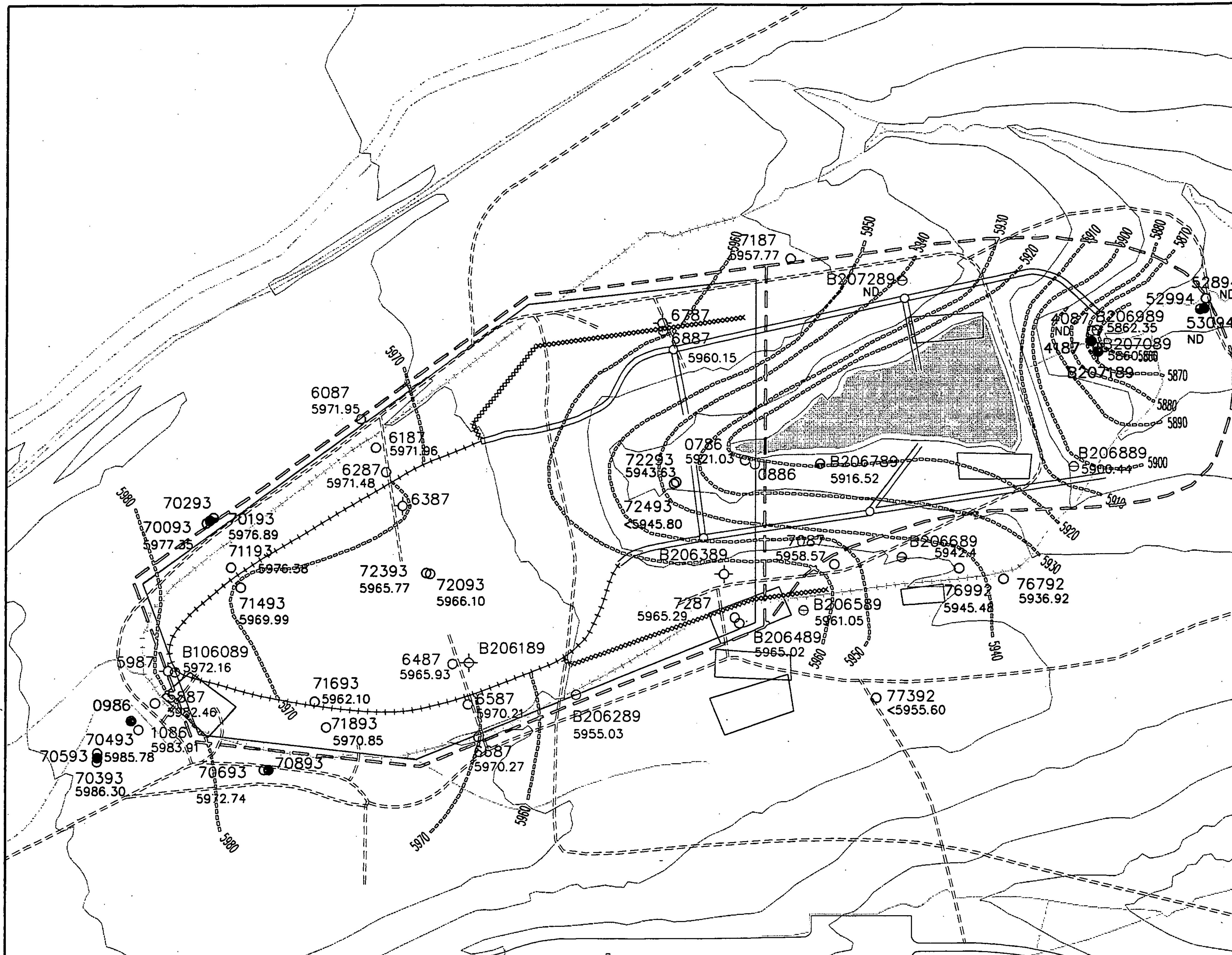
Present Landfill

1994 Annual RCRA Groundwater Monitoring Report

Waste Management Area and Monitoring Well Locations 1994

Figure 5-1

Date: February 20, 1995



EXPLANATION

- ○ Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- ● Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Surface Water Diversion Ditch
- Slurry Wall
- Groundwater Intercept System (perforated)
- Groundwater Intercept System (unperf.)
- Groundwater Potentiometric Contours (feet above MSL); Dashed Where Approximately Located
- ND No Data
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells

Source: 1993 Annual RCRA Groundwater Monitoring Report

N

0 feet 250 500

U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado

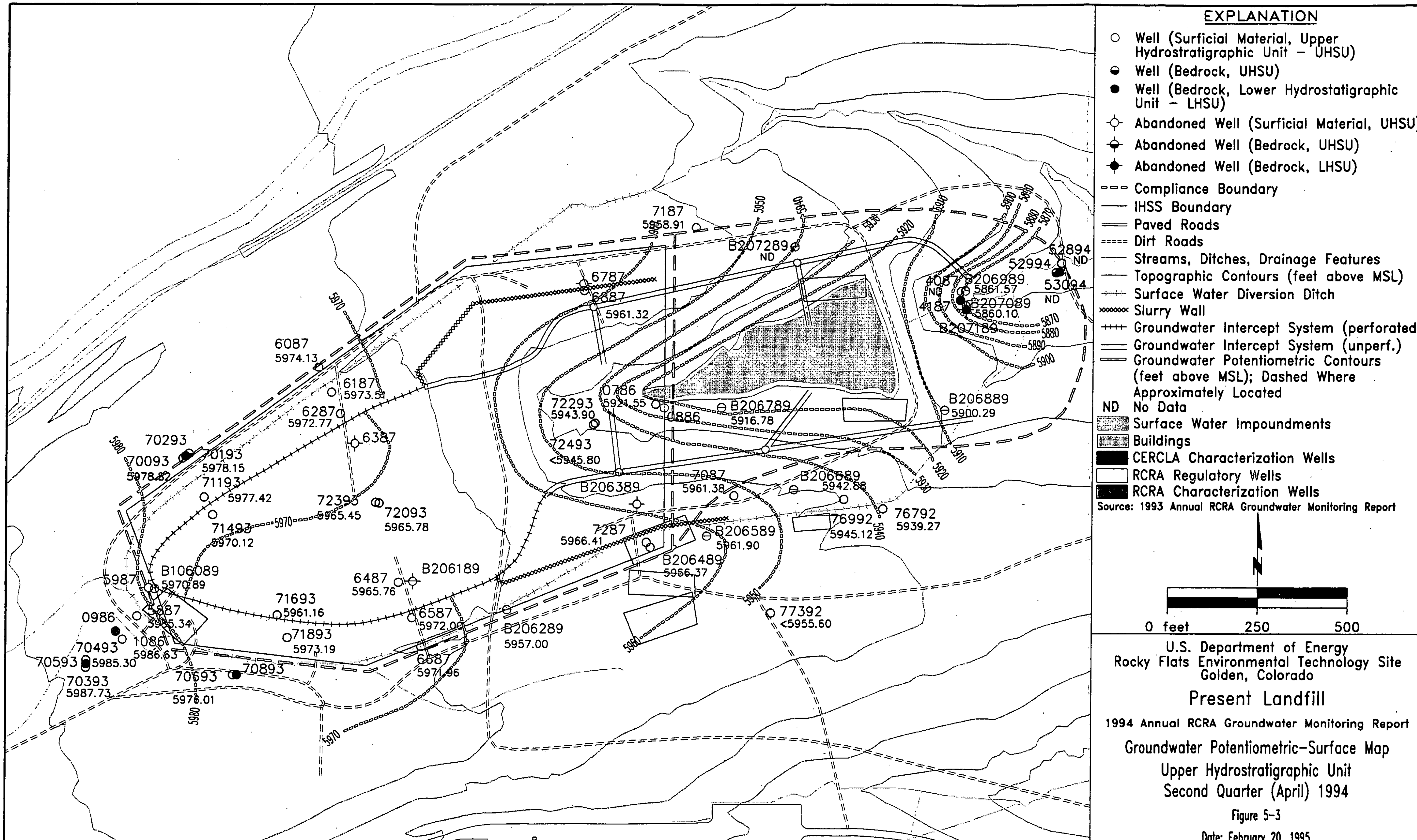
Present Landfill

1994 Annual RCRA Groundwater Monitoring Report

Groundwater Potentiometric-Surface Map
Upper Hydrostratigraphic Unit
First Quarter (January) 1994

Figure 5-2
Date: February 20, 1995

94 RCRA-A 5-2



U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado

Present Landfill

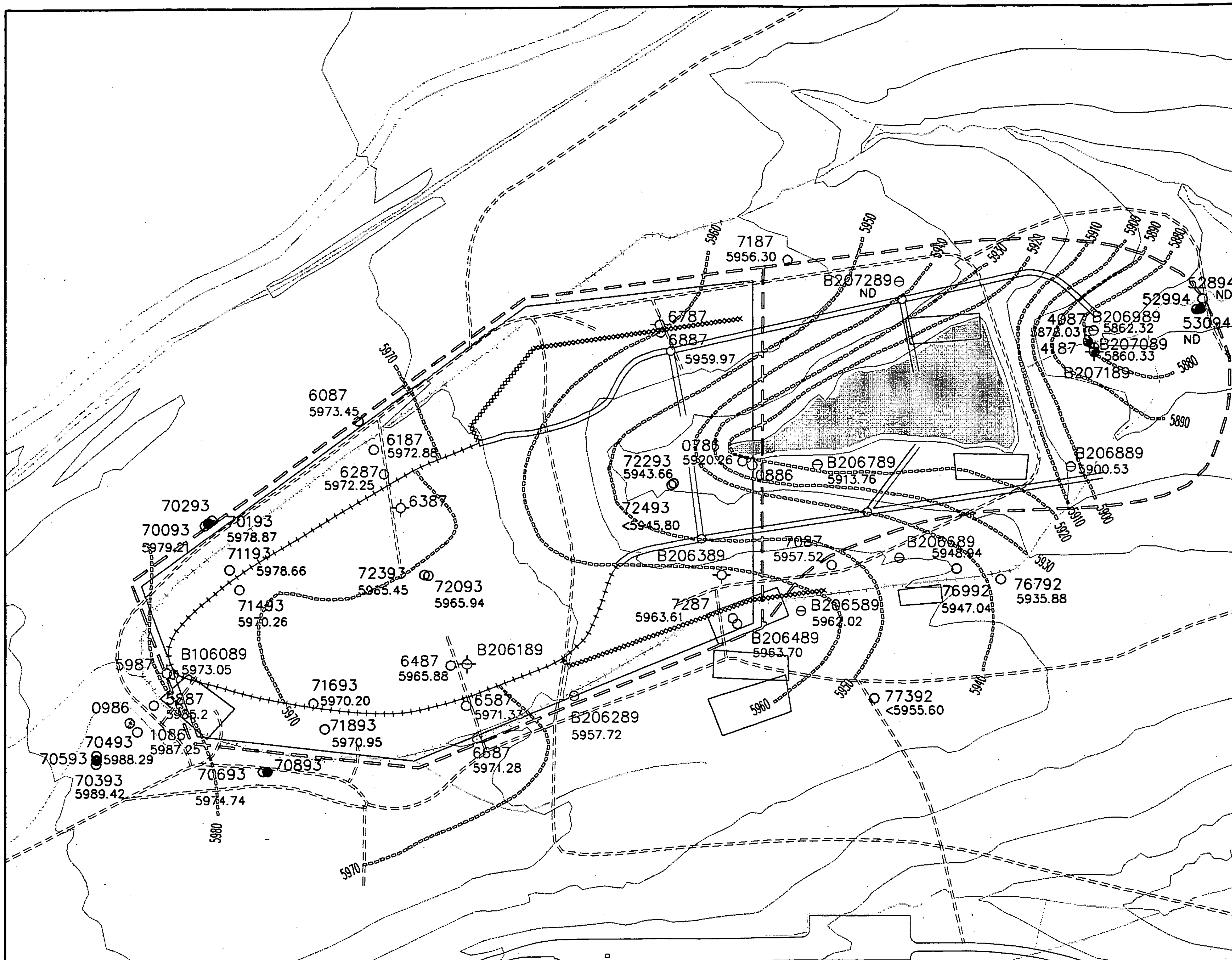
1994 Annual RCRA Groundwater Monitoring Report

Groundwater Potentiometric-Surface Map
Upper Hydrostratigraphic Unit
Second Quarter (April) 1994

Figure 5-3

Date: February 20, 1995

94 RCRA-A 5-3



EXPLANATION

- ○ Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- ● Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Surface Water Diversion Ditch
- Slurry Wall
- Groundwater Intercept System (perforated)
- Groundwater Intercept System (unperf.)
- Groundwater Potentiometric Contours (feet above MSL); Dashed Where Approximately Located
- ND No Data
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells

Source: 1993 Annual RCRA Groundwater Monitoring Report

N

0 feet 250 500

U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado

Present Landfill

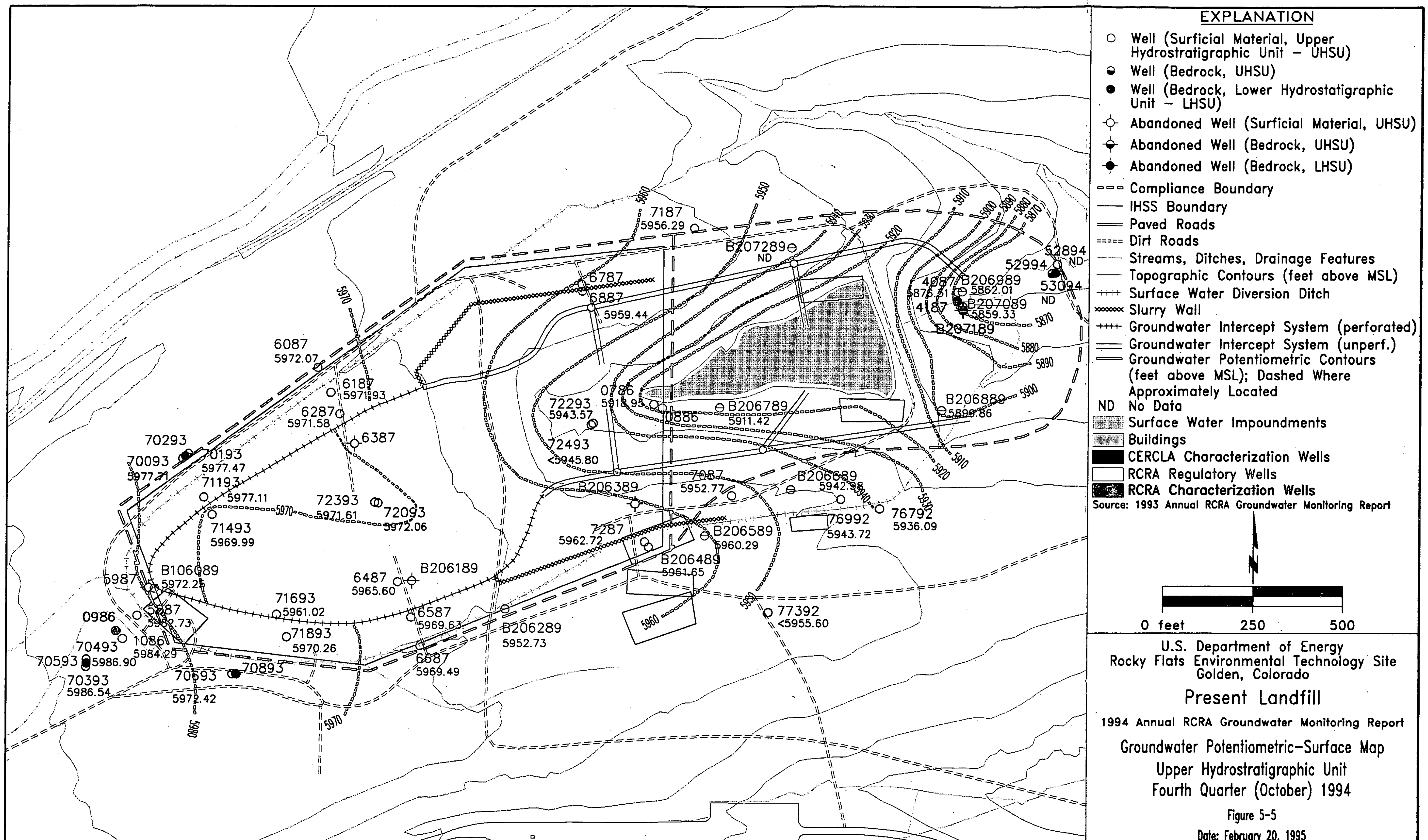
1994 Annual RCRA Groundwater Monitoring Report

Groundwater Potentiometric–Surface Map Upper Hydrostratigraphic Unit Third Quarter (July) 1994

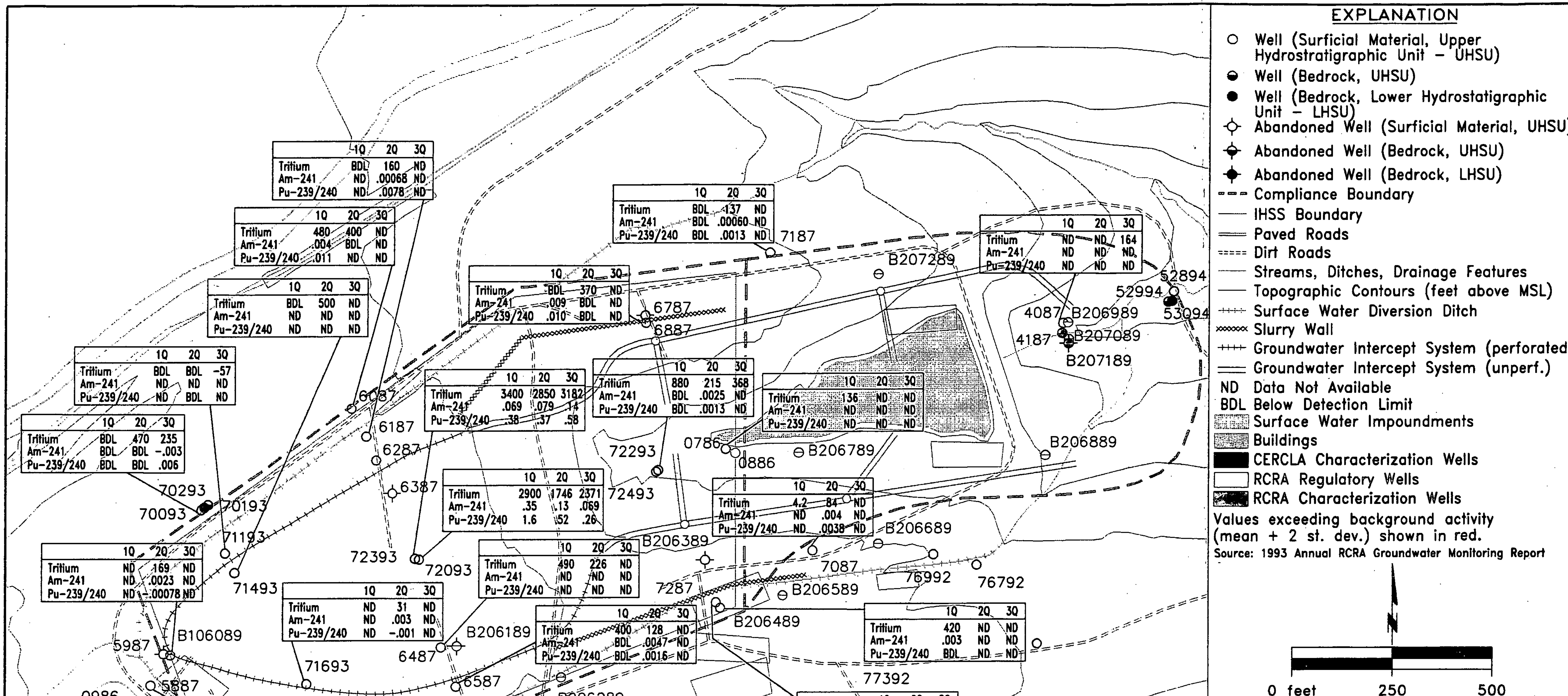
Figure 5–4

Date: February 20, 1995

94 RCRA-A 5-4


EXPLANATION
Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
Well (Bedrock, UHSU)
Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
Abandoned Well (Surficial Material, UHSU)
Abandoned Well (Bedrock, UHSU)
Abandoned Well (Bedrock, LHSU)
Compliance Boundary
IHSS Boundary
Paved Roads
Dirt Roads
Streams, Ditches, Drainage Features
Topographic Contours (feet above MSL)
Surface Water Diversion Ditch
Slurry Wall
Groundwater Intercept System (perforated)
Groundwater Intercept System (unperf.)
Groundwater Potentiometric Contours (feet above MSL); Dashed Where Approximately Located
ND No Data
Surface Water Impoundments
Buildings
CERCLA Characterization Wells
RCRA Regulatory Wells
RCRA Characterization Wells
Source: 1993 Annual RCRA Groundwater Monitoring Report
0 feet 250 500
U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado
Present Landfill
1994 Annual RCRA Groundwater Monitoring Report
Groundwater Potentiometric-Surface Map
Upper Hydrostratigraphic Unit
Fourth Quarter (October) 1994
Figure 5-5
Date: February 20, 1995

94 RCRA-A 5-5



U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado

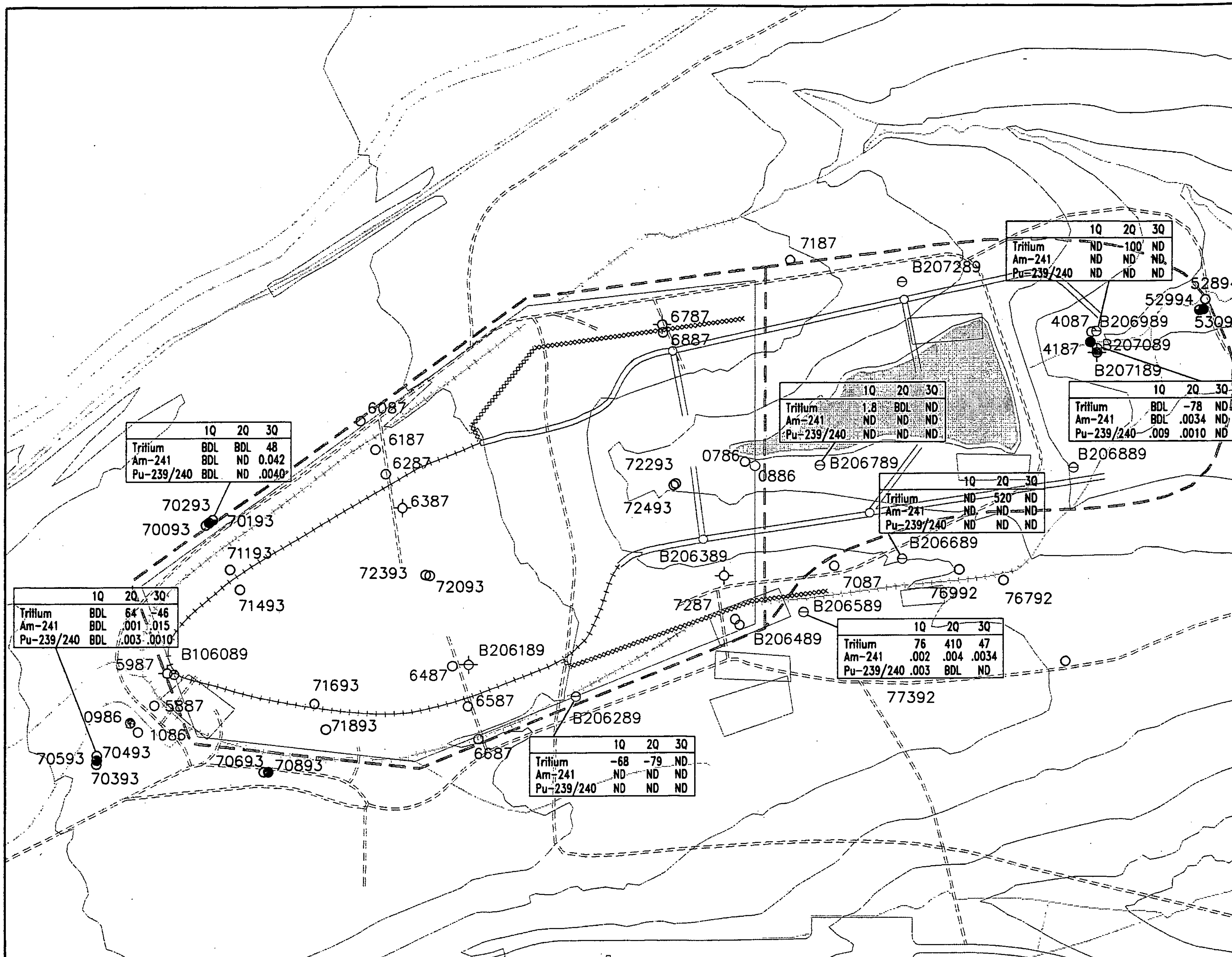
Present Landfill

1994 Annual RCRA Groundwater Monitoring Report

Total Tritium, Am-241, Pu-239/240 (pCi/L) in Groundwater UHSU Surficial Materials, 1994

Figure 5-6

Date: February 20, 1995

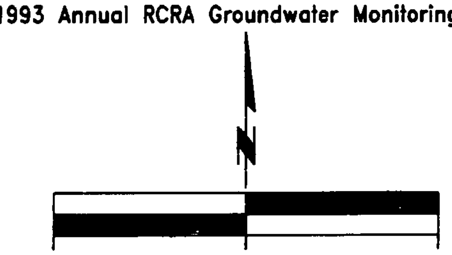


EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Surface Water Diversion Ditch
- Slurry Wall
- Groundwater Intercept System (perforated)
- Groundwater Intercept System (unperf.)
- ND Data Not Available
- BDL Below Detection Limit
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells

Values exceeding background activity (mean + 2 st. dev.) shown in red.

Source: 1993 Annual RCRA Groundwater Monitoring Report



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Rocky Flats Environmental Technology Site
Golden, Colorado

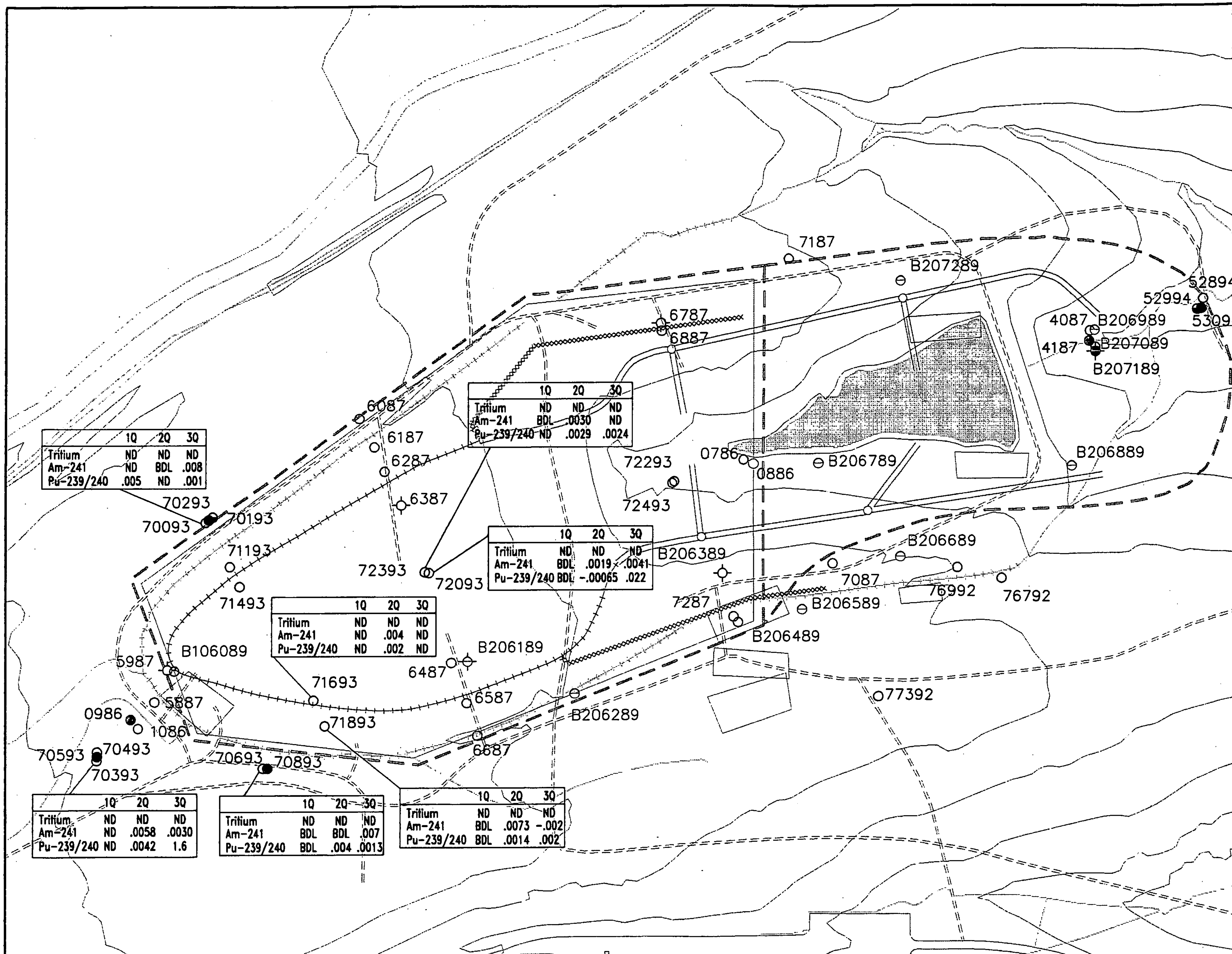
Present Landfill

1994 Annual RCRA Groundwater Monitoring Report

Total Tritium, Am-241, Pu-239/240 (pCi/L) in Groundwater UHSU Bedrock, 1994

Figure 5-7

Date: February 20, 1995



	1Q	2Q	3Q
Tritium	ND	ND	ND
Am-241	ND	BDL	.008
Pu-239/240	.005	ND	.001

	1Q	2Q	3Q
Tritium	ND	ND	ND
Am-241	BDL	.0030	ND
Pu-239/240	ND	.0029	.0024

	1Q	2Q	3Q
Tritium	ND	ND	ND
Am-241	BDL	.0019	.0041
Pu-239/240	BDL	-.00065	.022

	1Q	2Q	3Q
Tritium	ND	ND	ND
Am-241	ND	.004	ND
Pu-239/240	ND	.002	ND

	1Q	2Q	3Q
Tritium	ND	ND	ND
Am-241	ND	.0058	.0030
Pu-239/240	ND	.0042	1.6

	1Q	2Q	3Q
Tritium	ND	ND	ND
Am-241	BDL	BDL	.007
Pu-239/240	BDL	.004	.0013

	1Q	2Q	3Q
Tritium	ND	ND	ND
Am-241	BDL	.0073	-.002
Pu-239/240	BDL	.0014	.002

EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Surface Water Diversion Ditch
- Slurry Wall
- Groundwater Intercept System (perforated)
- Groundwater Intercept System (unperf.)
- ND Data Not Available
- BDL Below Detection Limit
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells

Values exceeding background activity (mean + 2 st. dev.) shown in red.

Source: 1993 Annual RCRA Groundwater Monitoring Report

N

0 feet 250 500

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Rocky Flats Environmental Technology Site
Golden, Colorado

Present Landfill

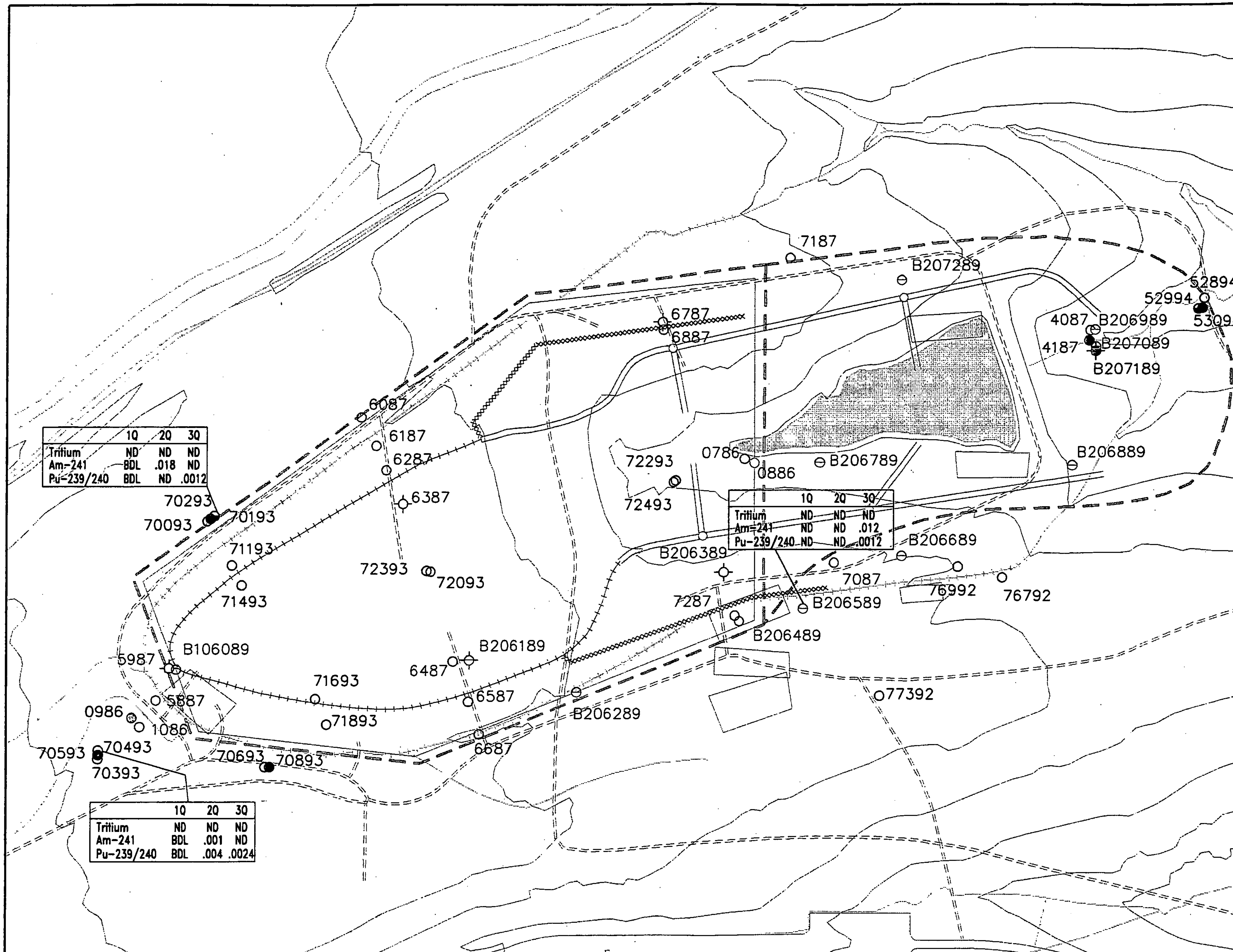
1994 Annual RCRA Groundwater Monitoring Report

Dissolved Tritium, Am-241, Pu-239/240 (pCi/L) in Groundwater
UHSU Surficial Materials, 1994

Figure 5-8

Date: February 20, 1995

94 RCRA-A 5-8



	1Q	2Q	3Q
Tritium	ND	ND	ND
Am-241	BDL	.018	ND
Pu-239/240	BDL	ND	.0012

	1Q	2Q	3Q
Tritium	ND	ND	ND
Am-241	ND	ND	.012
Pu-239/240	ND	ND	.0012

	1Q	2Q	3Q
Tritium	ND	ND	ND
Am-241	BDL	.001	ND
Pu-239/240	BDL	.004	.0024

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Golden, Colorado

Present Landfill

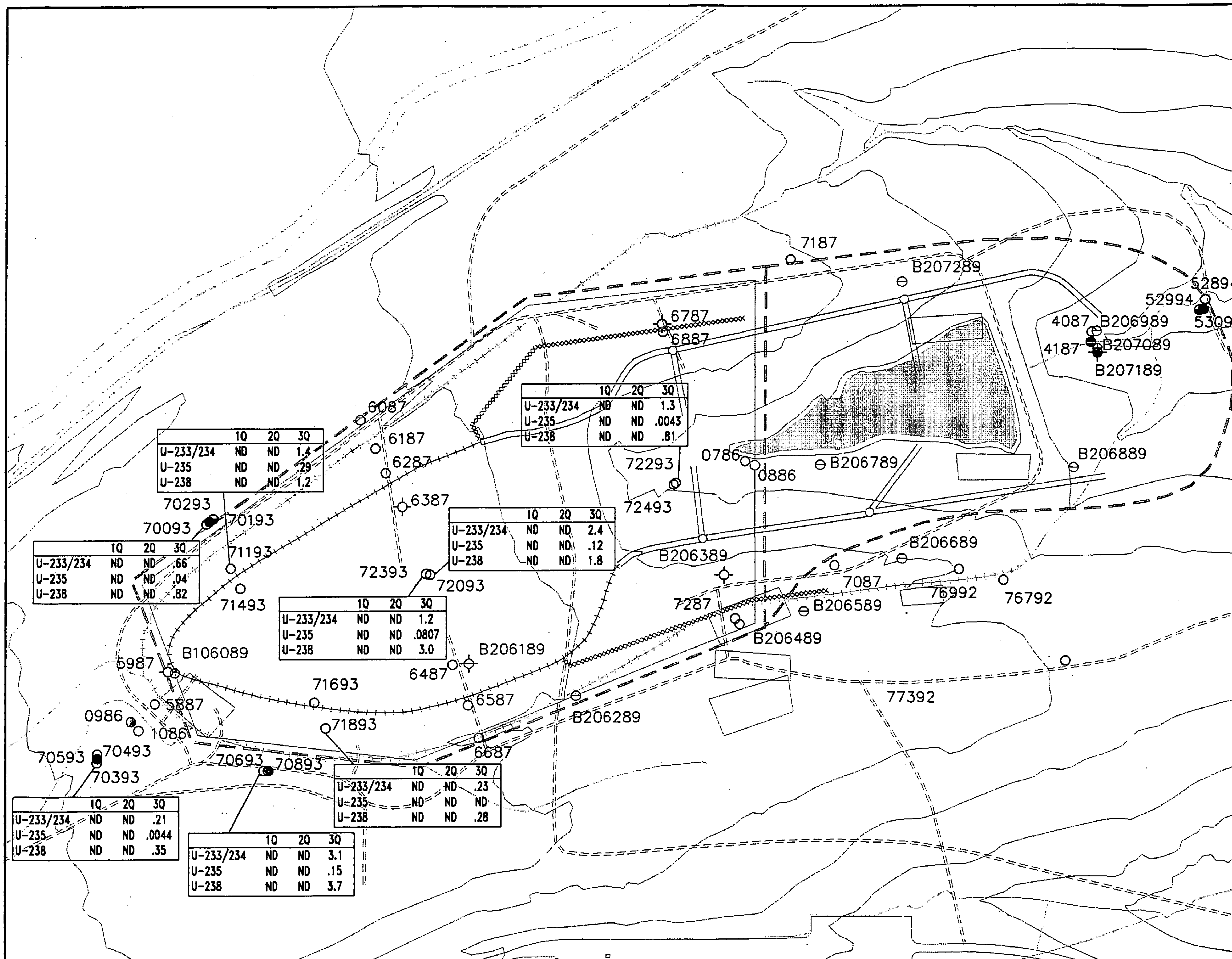
1994 Annual RCRA Groundwater Monitoring Report

Dissolved Tritium, Am-241, and Pu-239/240 (pCi/L) in Groundwater UHSU Bedrock, 1994

Figure 5-9

Date: February 20, 1995

94 RCRA-A 5-9



	1Q	2Q	3Q
U-233/234	ND	ND	1.4
U-235	ND	ND	.29
U-238	ND	ND	1.2

	1Q	2Q	3Q
U-233/234	ND	ND	1.3
U-235	ND	ND	.0043
U-238	ND	ND	.81

	1Q	2Q	3Q
U-233/234	ND	ND	.66
U-235	ND	ND	.04
U-238	ND	ND	.82

	1Q	2Q	3Q
U-233/234	ND	ND	2.4
U-235	ND	ND	.12
U-238	ND	ND	1.8

	1Q	2Q	3Q
U-233/234	ND	ND	1.2
U-235	ND	ND	.0807
U-238	ND	ND	3.0

	1Q	2Q	3Q
U-233/234	ND	ND	.23
U-235	ND	ND	ND
U-238	ND	ND	.28

	1Q	2Q	3Q
U-233/234	ND	ND	.21
U-235	ND	ND	.0044
U-238	ND	ND	.35

	1Q	2Q	3Q
U-233/234	ND	ND	3.1
U-235	ND	ND	.15
U-238	ND	ND	3.7

EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Surface Water Diversion Ditch
- Slurry Wall
- Groundwater Intercept System (perforated)
- Groundwater Intercept System (unperf.)
- ND Data Not Available
- BDL Below Detection Limit
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells

Values exceeding background activity (mean + 2 st. dev.) shown in red.

Source: 1993 Annual RCRA Groundwater Monitoring Report

N

0 feet 250 500

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Rocky Flats Environmental Technology Site
Golden, Colorado

Present Landfill

1994 Annual RCRA Groundwater Monitoring Report

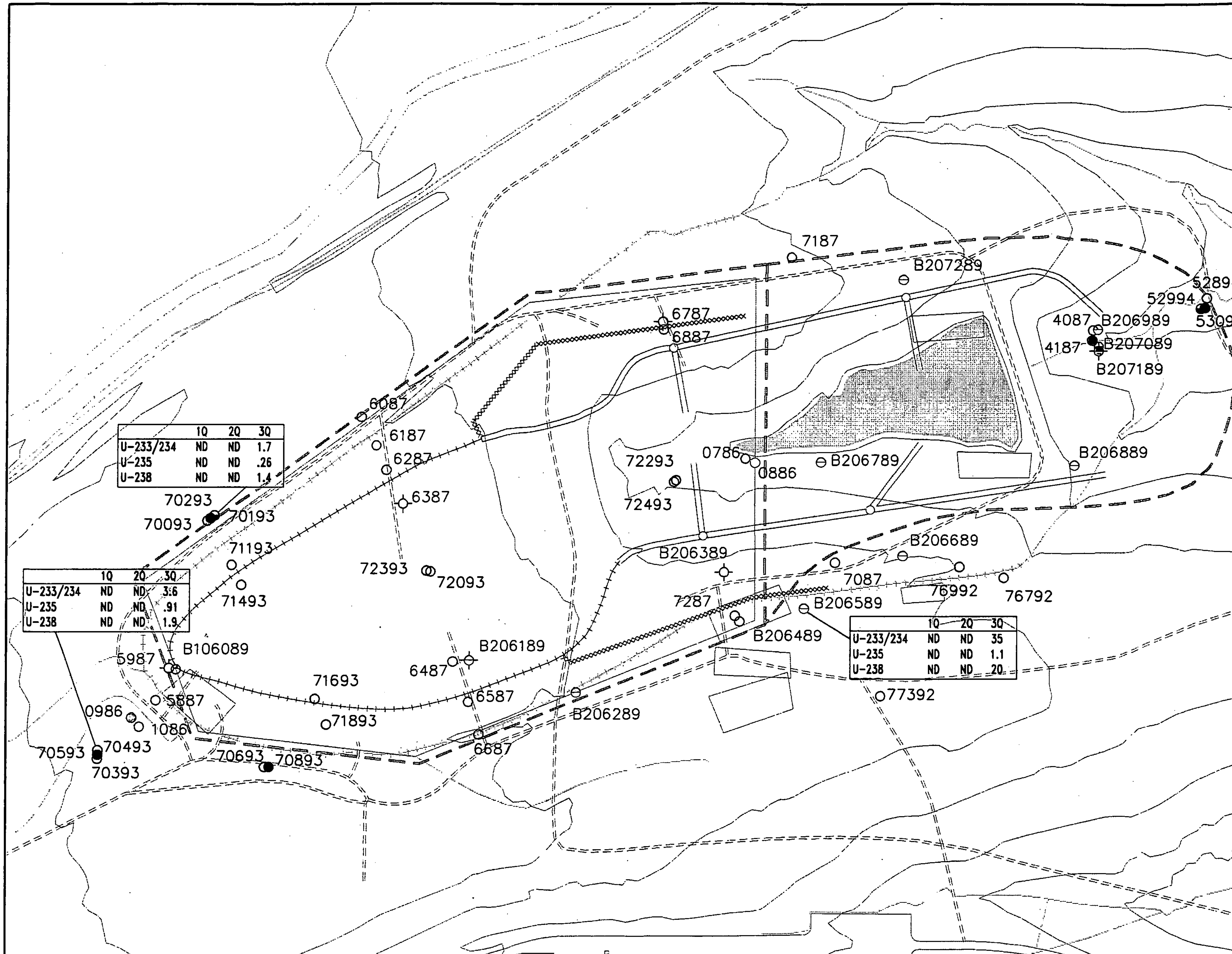
Total U-233/234, U-235, AND U-238 (pCi/L) in Groundwater

UHSU Surficial Materials, 1994

Figure 5-10

Date: February 20, 1995

94 RCRA-A 5-10



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Surface Water Diversion Ditch
- Slurry Wall
- Groundwater Intercept System (perforated)
- Groundwater Intercept System (unperf.)
- ND Data Not Available
- BDL Below Detection Limit
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells

Values exceeding background activity (mean + 2 st. dev.) shown in red.

Source: 1993 Annual RCRA Groundwater Monitoring Report

N

0 feet 250 500

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Golden, Colorado

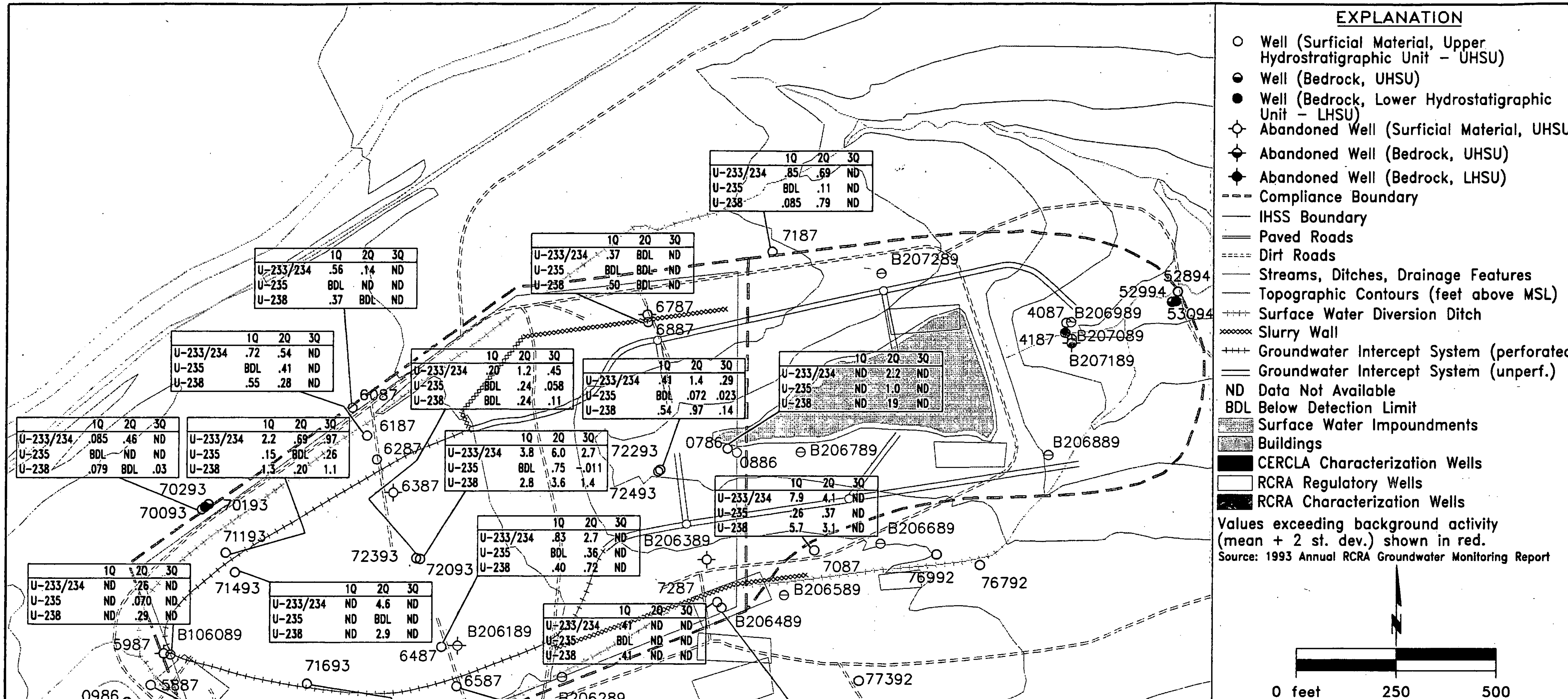
Present Landfill

1994 Annual RCRA Groundwater Monitoring Report

Total U-233/234, U-235, AND U-238 (pCi/L) in Groundwater UHSU Bedrock, 1994

Figure 5-11

Date: February 20, 1995



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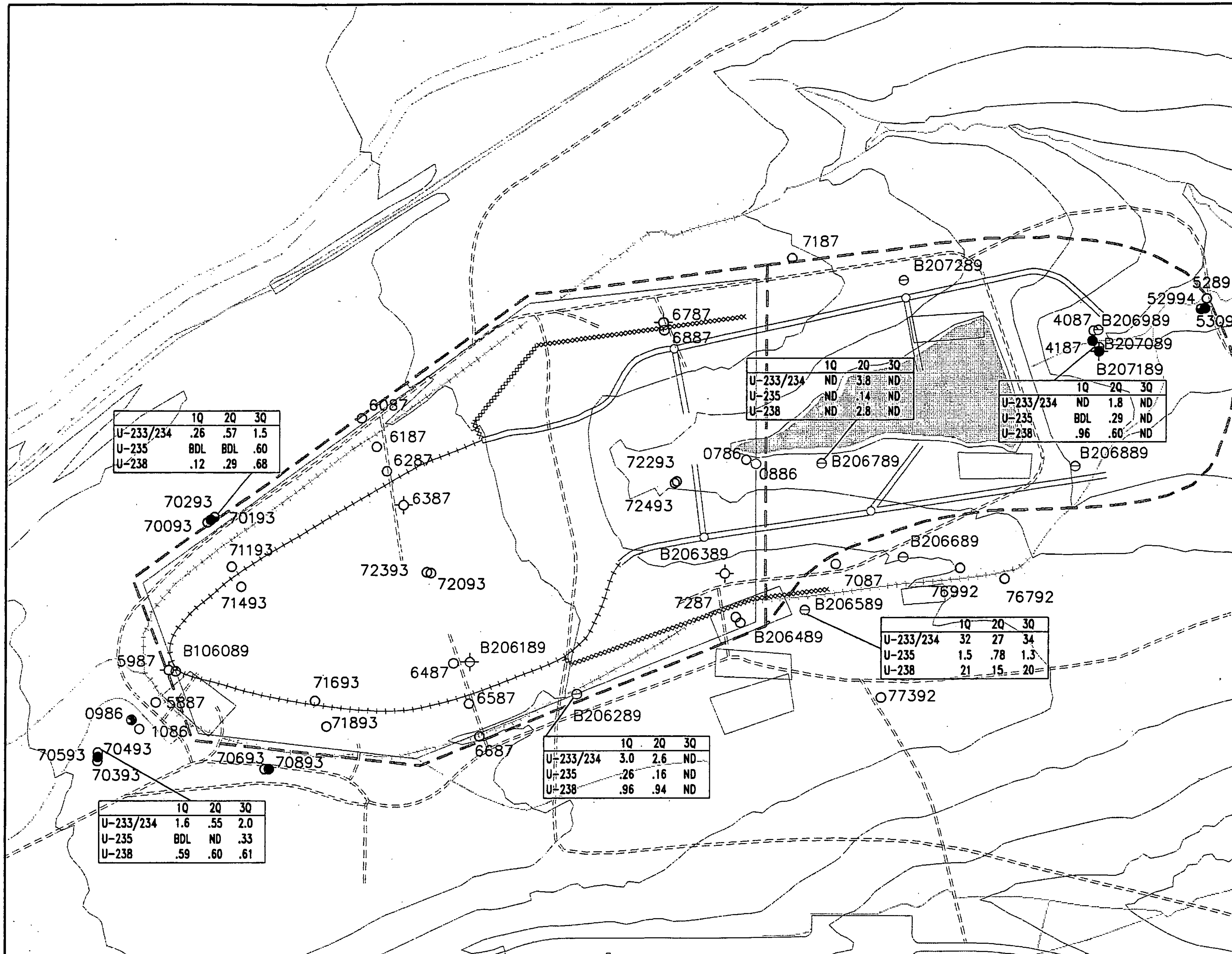
1994 Annual RCRA Groundwater Monitoring Report

Dissolved U-233/234, U-235, and U-238 (pCi/L) in Groundwater
UHSU Surficial Materials, 1994

Figure 5-12

Date: February 20, 1995

94 RCRA-A 5-12



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Surface Water Diversion Ditch
- Slurry Wall
- Groundwater Intercept System (perforated)
- Groundwater Intercept System (unperf.)
- ND Data Not Available
- BDL Below Detection Limit
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells

Values exceeding background activity (mean + 2 st. dev.) shown in red.

Source: 1993 Annual RCRA Groundwater Monitoring Report

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Rocky Flats Environmental Technology Site
Golden, Colorado

Present Landfill

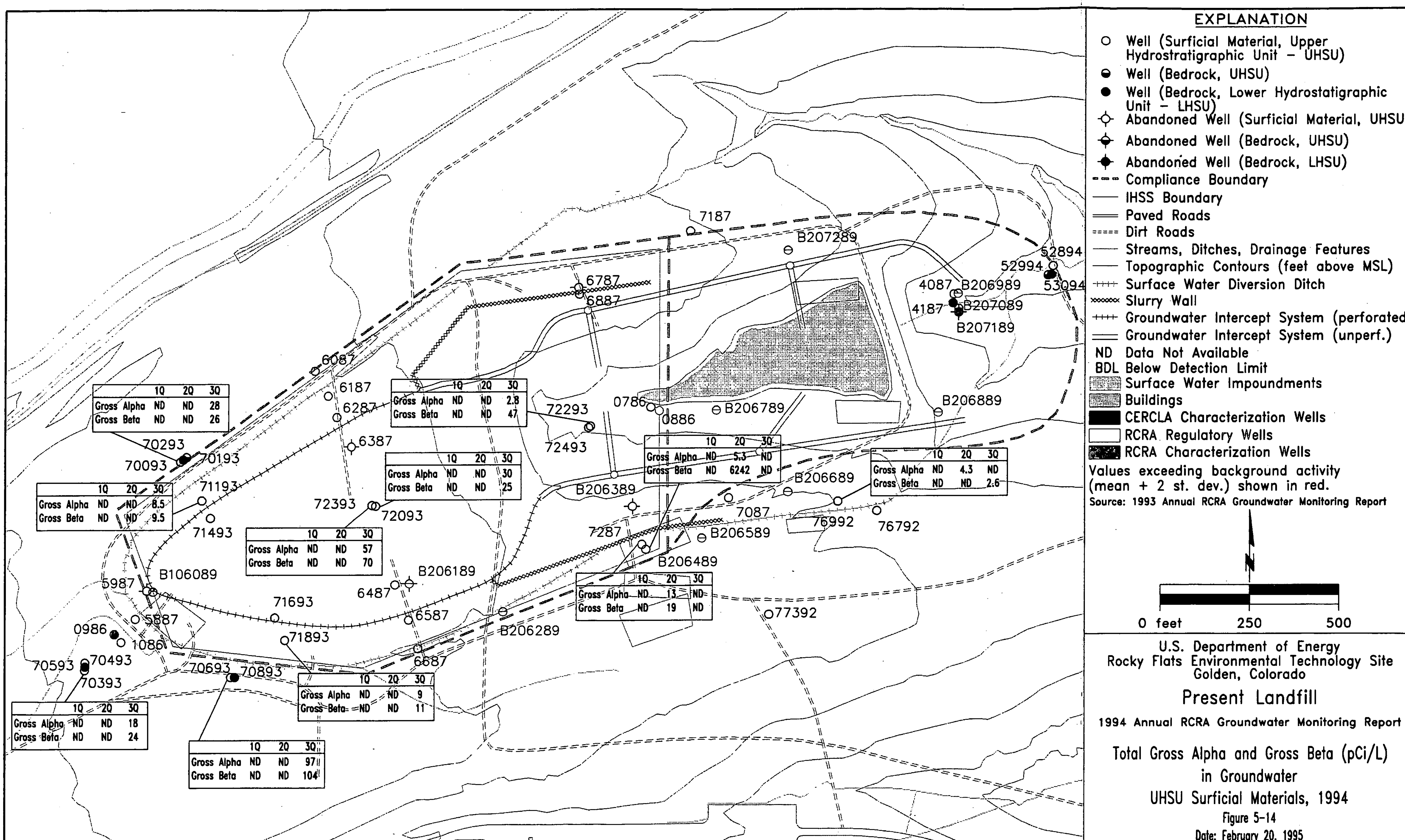
1994 Annual RCRA Groundwater Monitoring Report

Dissolved U-233/234, U-235, and U-238 (pCi/L) in Groundwater
UHSU Bedrock, 1994

Figure 5-13

Date: February 20, 1995

94 RCRA-A 5-13



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Rocky Flats Environmental Technology Site
Golden, Colorado

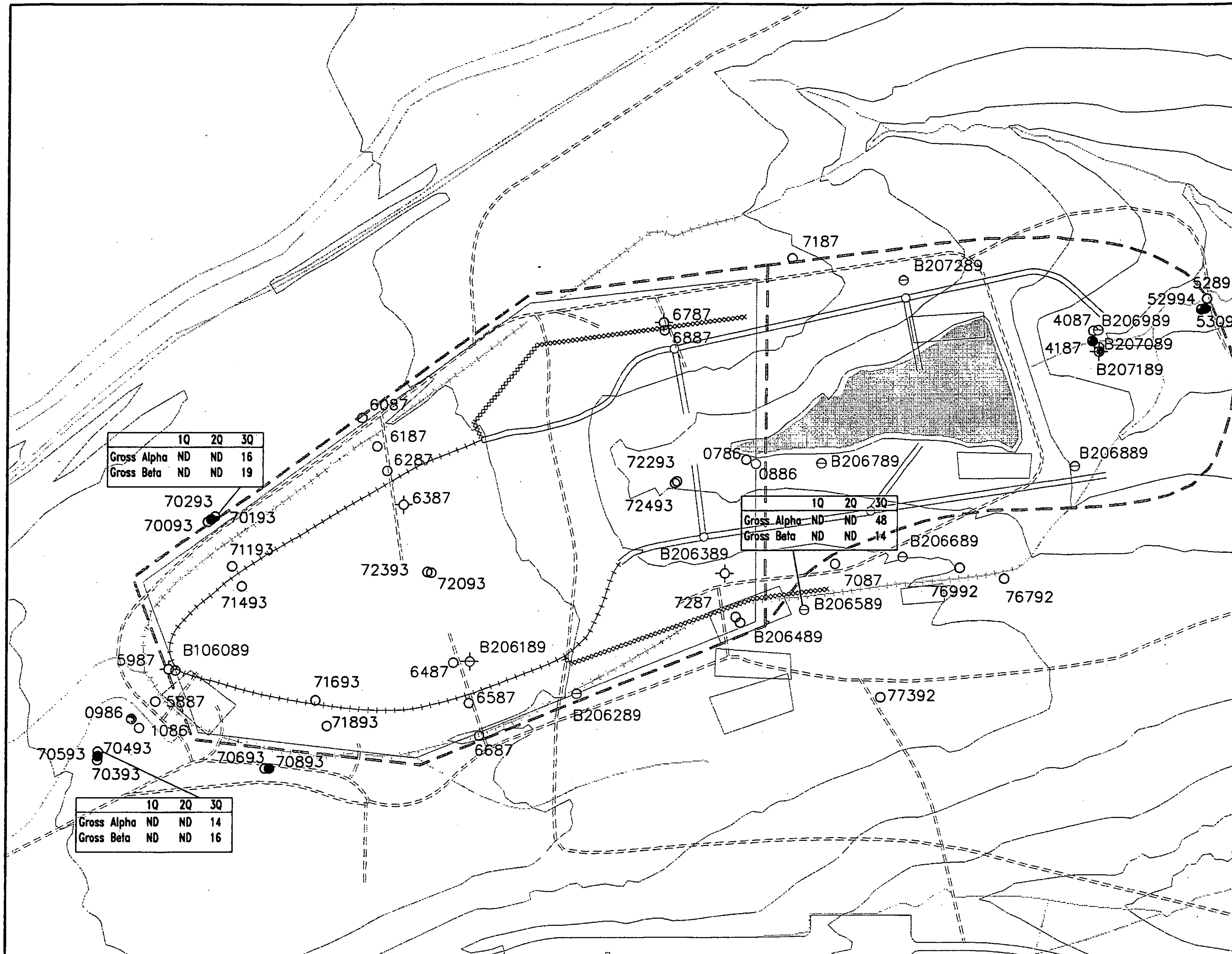
Present Landfill

1994 Annual RCRA Groundwater Monitoring Report

Total Gross Alpha and Gross Beta (pCi/L) in Groundwater UHSU Surficial Materials, 1994

Figure 5-14

Date: February 20, 1995



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Surface Water Diversion Ditch
- Slurry Wall
- Groundwater Intercept System (perforated)
- Groundwater Intercept System (unperf.)
- ND Data Not Available
- BDL Below Detection Limit
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells

Values exceeding background activity (mean + 2 st. dev.) shown in red.

Source: 1993 Annual RCRA Groundwater Monitoring Report

0 feet 250 500

U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado

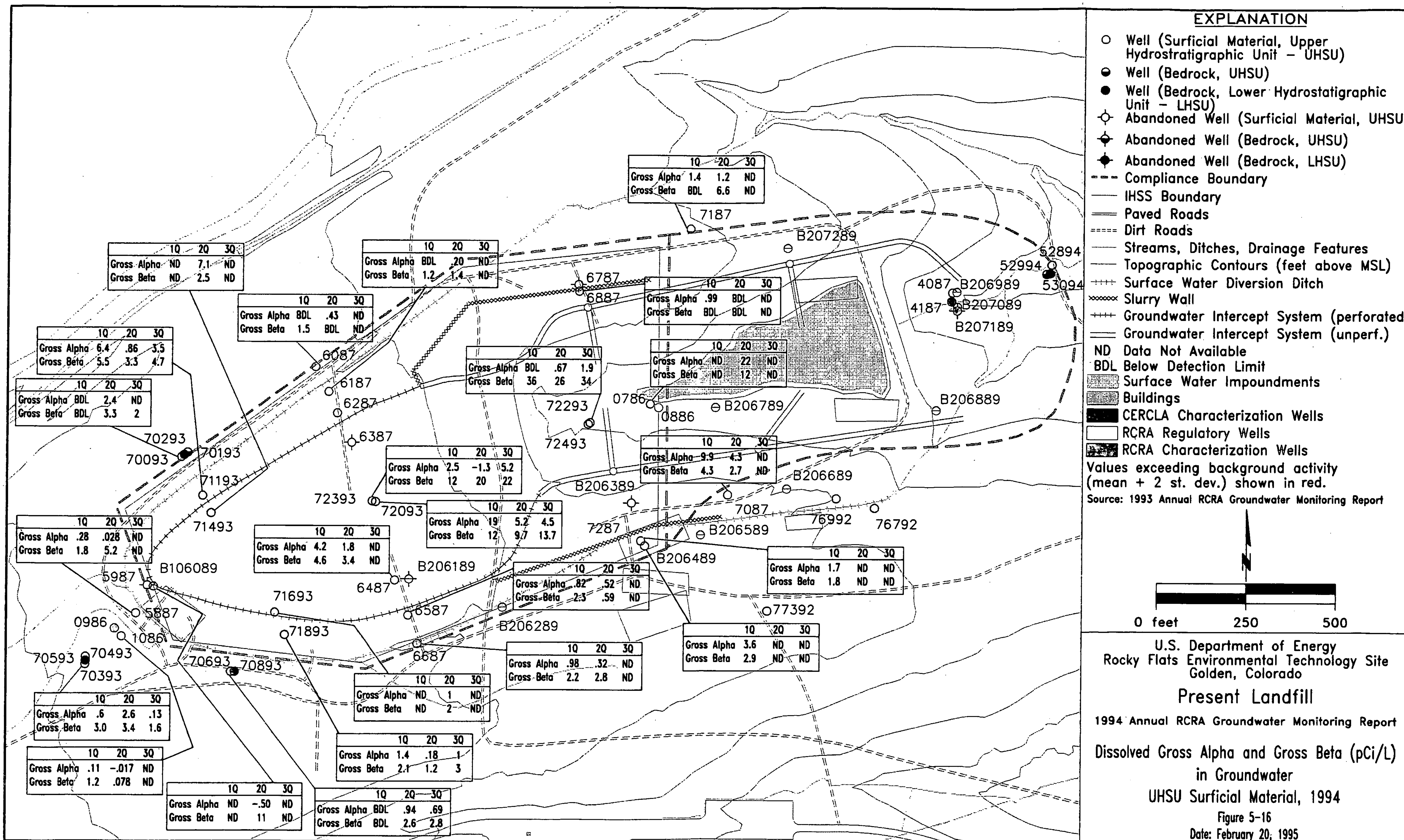
Present Landfill

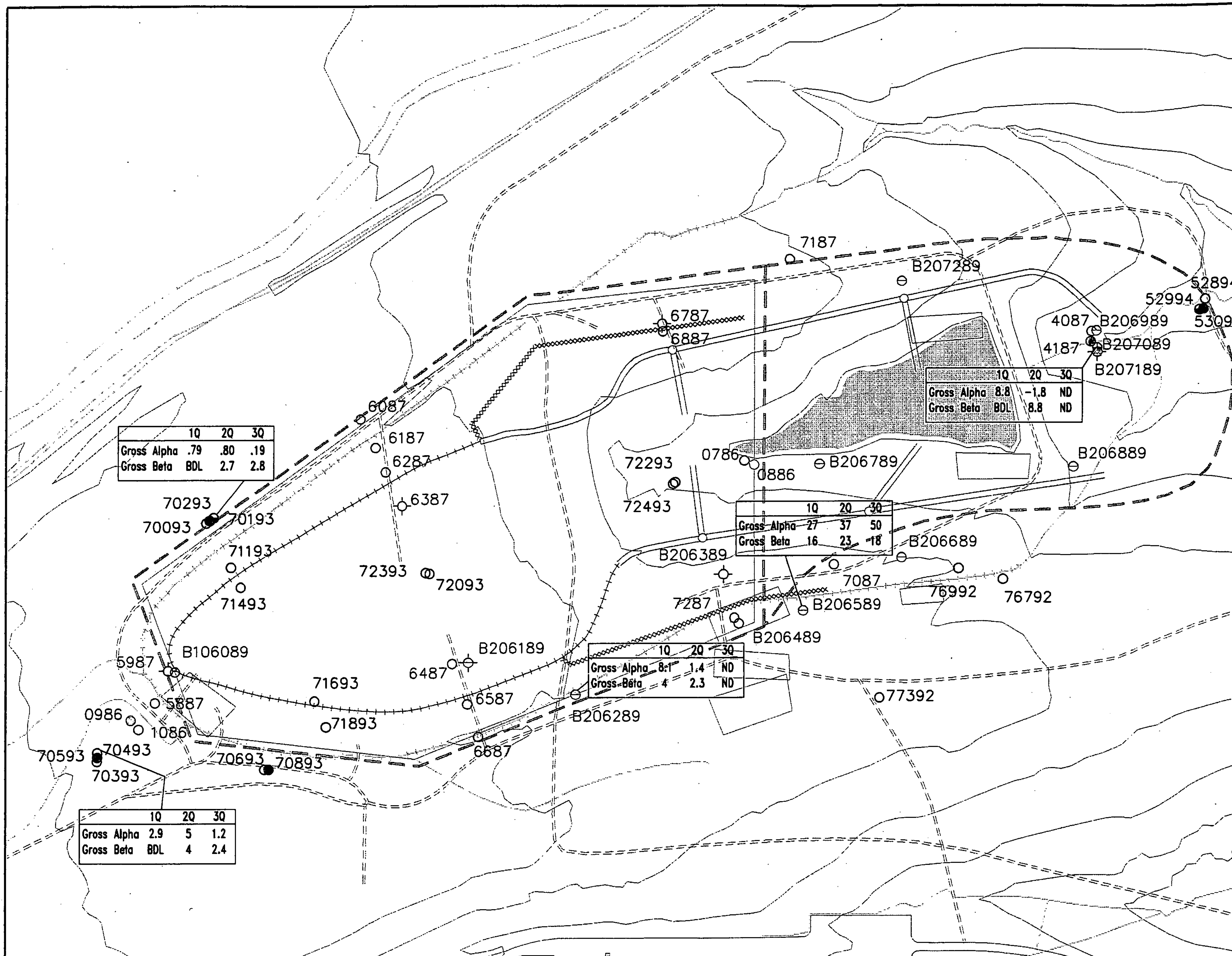
1994 Annual RCRA Groundwater Monitoring Report

Total Gross Alpha and Gross Beta (pCi/L) in Groundwater UHSU Bedrock, 1994

Figure 5-15

Date: February 20, 1995


EXPLANATION
Well (Surficial Material, Upper Hydrostratigraphic Unit - UHSU)
Well (Bedrock, UHSU)
Well (Bedrock, Lower Hydrostatigraphic Unit - LHSU)
Abandoned Well (Surficial Material, UHSU)
Abandoned Well (Bedrock, UHSU)
Abandoned Well (Bedrock, LHSU)
Compliance Boundary
IHSS Boundary
Paved Roads
Dirt Roads
Streams, Ditches, Drainage Features
Topographic Contours (feet above MSL)
Surface Water Diversion Ditch
Slurry Wall
Groundwater Intercept System (perforated)
Groundwater Intercept System (unperf.)
ND Data Not Available
BDL Below Detection Limit
Surface Water Impoundments
Buildings
CERCLA Characterization Wells
RCRA Regulatory Wells
RCRA Characterization Wells
Values exceeding background activity (mean + 2 st. dev.) shown in red.
Source: 1993 Annual RCRA Groundwater Monitoring Report
N
0 feet 250 500
U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado
Present Landfill
1994 Annual RCRA Groundwater Monitoring Report
Dissolved Gross Alpha and Gross Beta (pCi/L) in Groundwater
UHSU Surficial Material, 1994
Figure 5-16
Date: February 20, 1995
1Q 2Q 3Q
Gross Alpha 1.4 1.2 ND
Gross Beta BDL 6.6 ND
7187
B207289
1Q 2Q 3Q
Gross Alpha ND 7.1 ND
Gross Beta ND 2.5 ND
1Q 2Q 3Q
Gross Alpha BDL .20 ND
Gross Beta 1.2 1.4 ND
1Q 2Q 3Q
Gross Alpha BDL .43 ND
Gross Beta 1.5 BDL ND
6787
6887
1Q 2Q 3Q
Gross Alpha .99 BDL ND
Gross Beta BDL BDL ND
52894
52994
53094
4087
B206989
4187
B207089
B207189
1Q 2Q 3Q
Gross Alpha 6.4 .86 3.5
Gross Beta 5.5 3.3 4.7
6087
6187
1Q 2Q 3Q
Gross Alpha BDL .67 1.9
Gross Beta 36 26 34
1Q 2Q 3Q
Gross Alpha ND 22 ND
Gross Beta ND 12 ND
1Q 2Q 3Q
Gross Alpha BDL 2.4 ND
Gross Beta BDL 3.3 2
6287
72293
0786
0886
B206789
B206889
6387
72493
70293
70093
70193
1Q 2Q 3Q
Gross Alpha 2.5 -1.3 5.2
Gross Beta 12 20 22
1Q 2Q 3Q
Gross Alpha 9.9 4.3 ND
Gross Beta 4.3 2.7 ND
B206689
71193
B206389
72393
72093
1Q 2Q 3Q
Gross Alpha 19 5.2 4.5
Gross Beta 12 9.7 13.7
7087
76992
76792
71493
7287
B206589
1Q 2Q 3Q
Gross Alpha .28 .028 ND
Gross Beta 1.8 5.2 ND
1Q 2Q 3Q
Gross Alpha 4.2 1.8 ND
Gross Beta 4.6 3.4 ND
B206489
1Q 2Q 3Q
Gross Alpha 1.7 ND ND
Gross Beta 1.8 ND ND
B106089
B206189
5987
6487
1Q 2Q 3Q
Gross Alpha .82 .52 ND
Gross Beta 2.3 .59 ND
71693
5887
6587
77392
0986
1086
B206289
71893
1Q 2Q 3Q
Gross Alpha 3.6 ND ND
Gross Beta 2.9 ND ND
70593
70493
70393
6687
70693
70893
1Q 2Q 3Q
Gross Alpha .98 .32 ND
Gross Beta 2.2 2.8 ND
1Q 2Q 3Q
Gross Alpha ND 1 ND
Gross Beta ND 2 ND
1Q 2Q 3Q
Gross Alpha .6 2.6 .13
Gross Beta 3.0 3.4 1.6
1Q 2Q 3Q
Gross Alpha 1.4 .18 1
Gross Beta 2.1 1.2 3
1Q 2Q 3Q
Gross Alpha .11 -.017 ND
Gross Beta 1.2 .078 ND
1Q 2Q 3Q
Gross Alpha ND -.50 ND
Gross Beta ND 11 ND
1Q 2Q 3Q
Gross Alpha BDL .94 .69
Gross Beta BDL 2.6 2.8



	1Q	2Q	3Q
Gross Alpha	.79	.80	.19
Gross Beta	BDL	2.7	2.8

	1Q	2Q	3Q
Gross Alpha	8.8	-1.8	ND
Gross Beta	BDL	8.8	ND

	1Q	2Q	3Q
Gross Alpha	27	37	50
Gross Beta	16	23	18

	1Q	2Q	3Q
Gross Alpha	8.1	1.4	ND
Gross Beta	4	2.3	ND

	1Q	2Q	3Q
Gross Alpha	2.9	5	1.2
Gross Beta	BDL	4	2.4

EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Surface Water Diversion Ditch
- Slurry Wall
- Groundwater Intercept System (perforated)
- Groundwater Intercept System (unperf.)
- ND Data Not Available
- BDL Below Detection Limit
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells

Values exceeding background activity (mean + 2 st. dev.) shown in red.

Source: 1993 Annual RCRA Groundwater Monitoring Report

U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado

Present Landfill

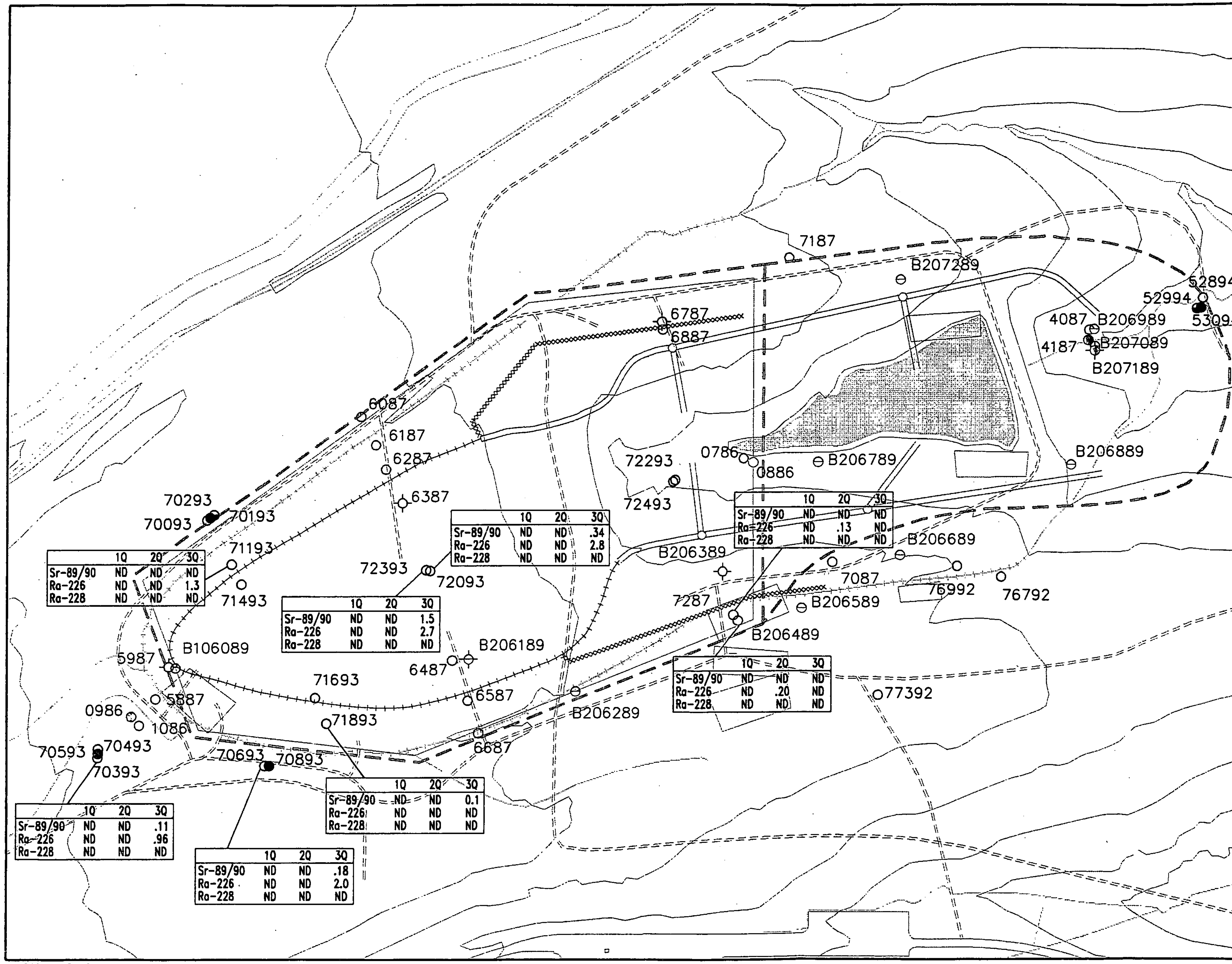
1994 Annual RCRA Groundwater Monitoring Report

Dissolved Gross Alpha and Gross Beta (pCi/L) in Groundwater
UHSU Bedrock, 1994

Figure 5-17

Date: February 20, 1995

94 RCRA-A 5-17



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Surface Water Diversion Ditch
- Slurry Wall
- Groundwater Intercept System (perforated)
- Groundwater Intercept System (unperf.)
- ND Data Not Available
- BDL Below Detection Limit
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells

Values exceeding background activity (mean + 2 st. dev.) shown in red.

Source: 1993 Annual RCRA Groundwater Monitoring Report

0 feet 250 500

U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado

Present Landfill

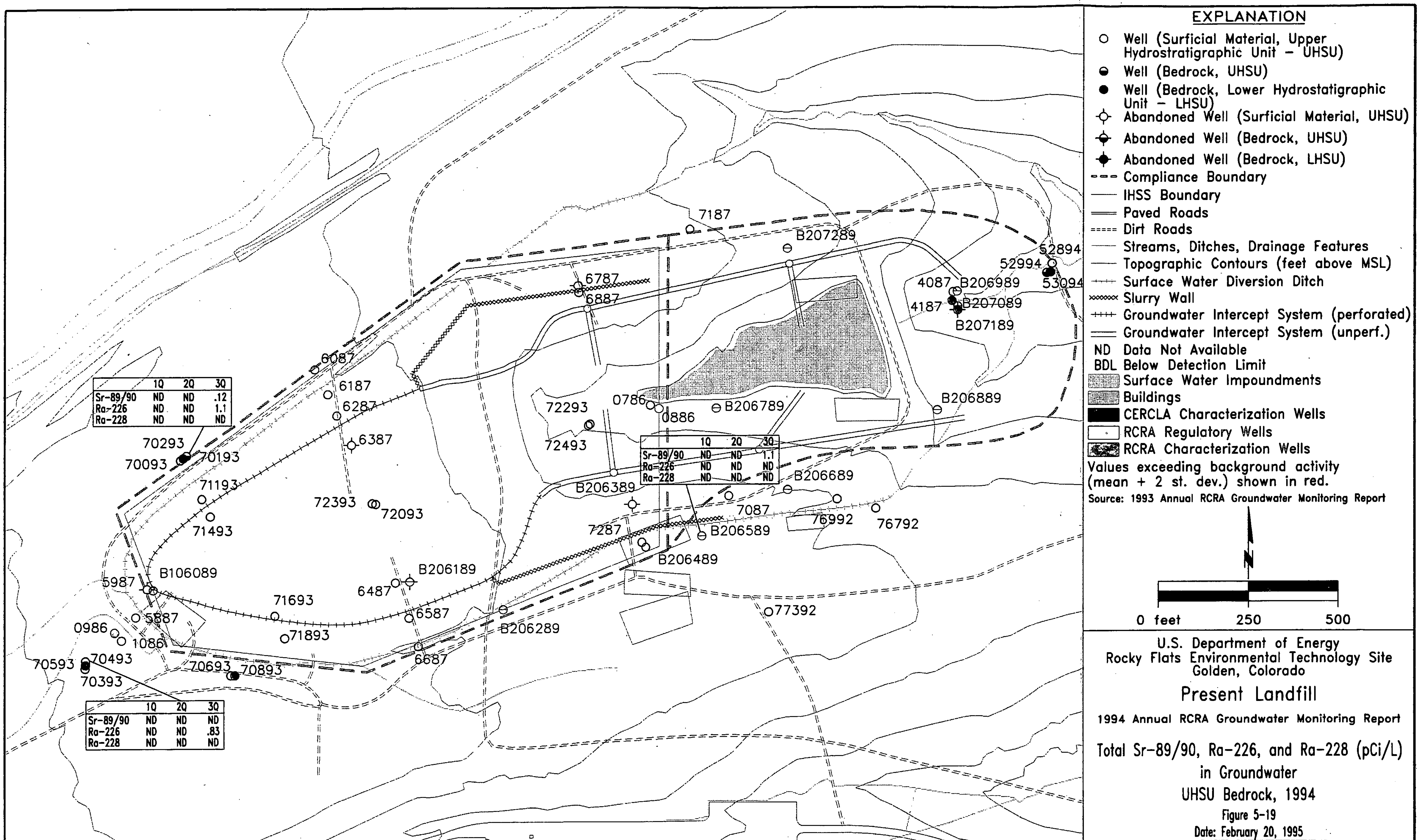
1994 Annual RCRA Groundwater Monitoring Report

Total Sr-89/90, Ra-226, and Ra-228 (pCi/L) in Groundwater
UHSU Surficial Material, 1994

Figure 5-18

Date: February 20, 1995

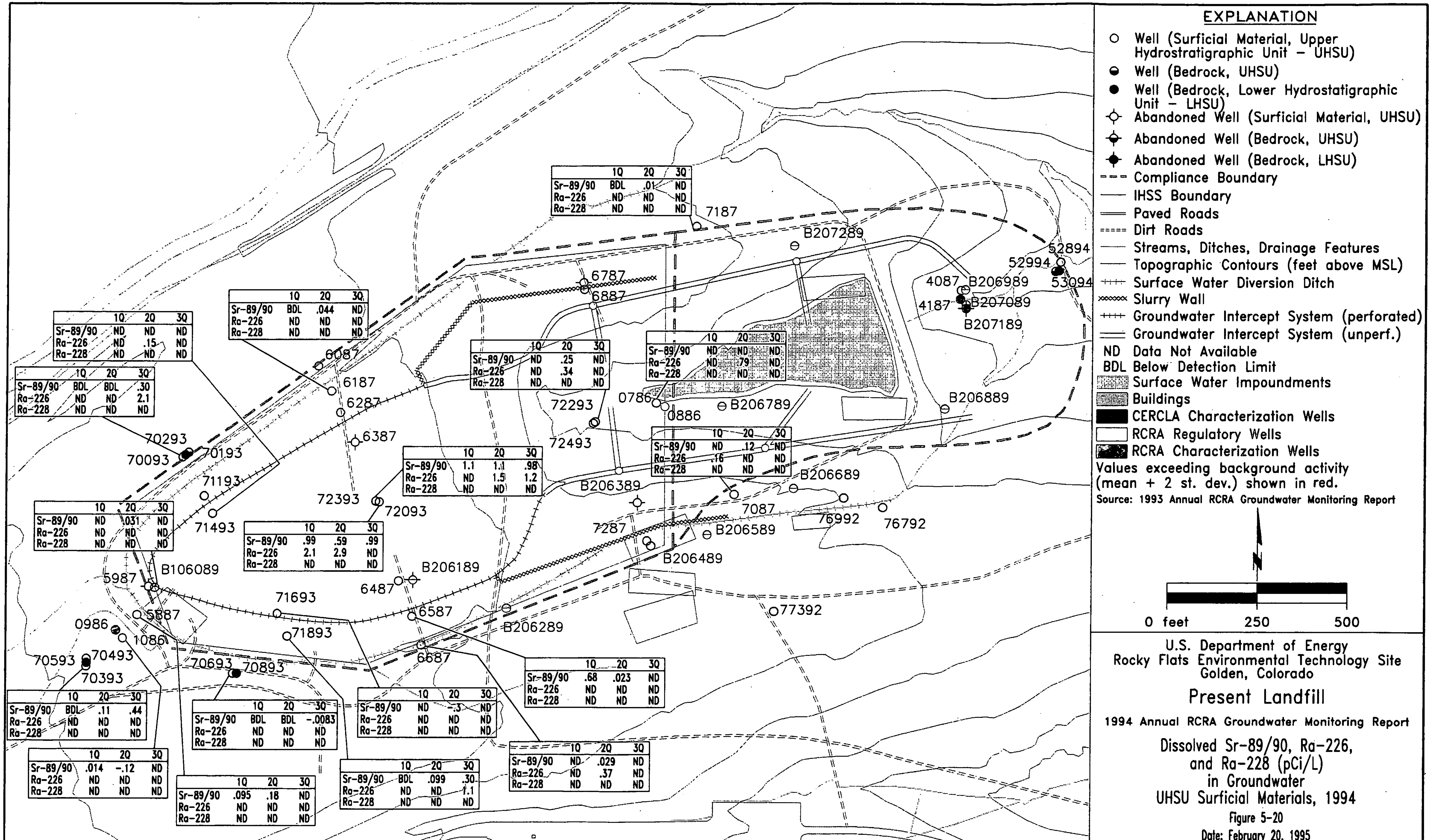
94 RCRA-A 5-18



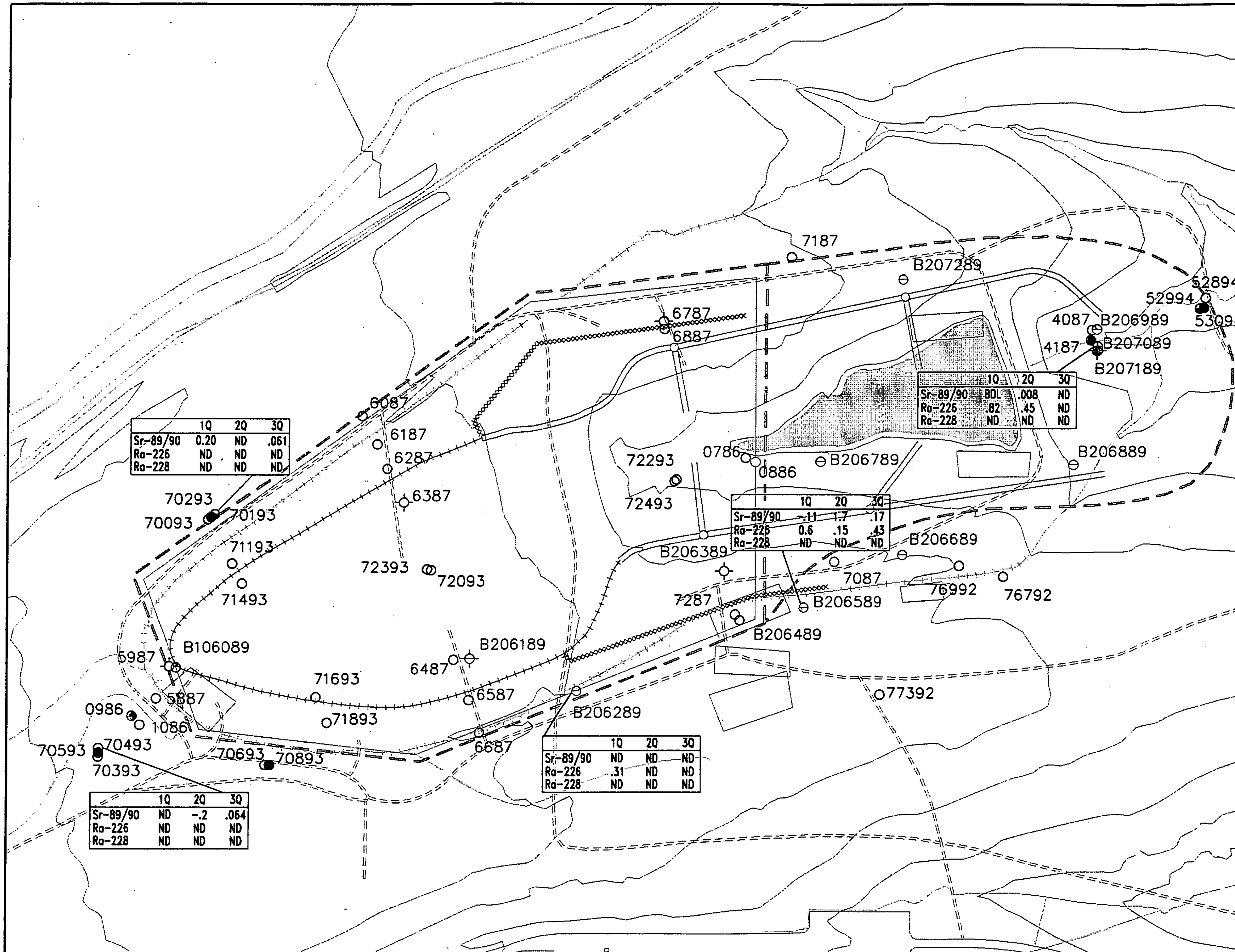
	1Q	2Q	3Q
Sr-89/90	ND	ND	.12
Ra-226	ND	ND	1.1
Ra-228	ND	ND	ND

	1Q	2Q	3Q
Sr-89/90	ND	ND	1.1
Ra-226	ND	ND	ND
Ra-228	ND	ND	ND

	1Q	2Q	3Q
Sr-89/90	ND	ND	ND
Ra-226	ND	ND	.83
Ra-228	ND	ND	ND



EXPLANATION
Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
Well (Bedrock, UHSU)
Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
Abandoned Well (Surficial Material, UHSU)
Abandoned Well (Bedrock, UHSU)
Abandoned Well (Bedrock, LHSU)
Compliance Boundary
IHSS Boundary
Paved Roads
Dirt Roads
Streams, Ditches, Drainage Features
Topographic Contours (feet above MSL)
Surface Water Diversion Ditch
Slurry Wall
Groundwater Intercept System (perforated)
Groundwater Intercept System (unperf.)
ND Data Not Available
BDL Below Detection Limit
Surface Water Impoundments
Buildings
CERCLA Characterization Wells
RCRA Regulatory Wells
RCRA Characterization Wells
Values exceeding background activity (mean + 2 st. dev.) shown in red.
Source: 1993 Annual RCRA Groundwater Monitoring Report
0 feet 250 500
U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado
Present Landfill
1994 Annual RCRA Groundwater Monitoring Report
Dissolved Sr-89/90, Ra-226, and Ra-228 (pCi/L) in Groundwater UHSU Surficial Materials, 1994
Figure 5-20
Date: February 20, 1995
7187
1Q 2Q 3Q
Sr-89/90 BDL .01 ND
Ra-226 ND ND ND
Ra-228 ND ND ND
B207289
52894
52994
53094
4087
B206989
4187
B207089
B207189
6787
6887
1Q 2Q 3Q
Sr-89/90 BDL .044 ND
Ra-226 ND ND ND
Ra-228 ND ND ND
1Q 2Q 3Q
Sr-89/90 ND ND ND
Ra-226 ND .15 ND
Ra-228 ND ND ND
6087
6187
6287
1Q 2Q 3Q
Sr-89/90 BDL BDL .30
Ra-226 ND ND 2.1
Ra-228 ND ND ND
1Q 2Q 3Q
Sr-89/90 ND .25 ND
Ra-226 ND .34 ND
Ra-228 ND ND ND
1Q 2Q 3Q
Sr-89/90 ND ND ND
Ra-226 ND .79 ND
Ra-228 ND ND ND
0786
0886
B206789
B206889
72293
72493
6387
70293
70093
70193
1Q 2Q 3Q
Sr-89/90 1.1 1.1 .98
Ra-226 ND 1.5 1.2
Ra-228 ND ND ND
1Q 2Q 3Q
Sr-89/90 ND .12 ND
Ra-226 .16 ND ND
Ra-228 ND ND ND
B206389
B206689
71193
72393
72093
7087
76992
76792
1Q 2Q 3Q
Sr-89/90 ND .031 ND
Ra-226 ND ND ND
Ra-228 ND ND ND
71493
1Q 2Q 3Q
Sr-89/90 .99 .59 .99
Ra-226 2.1 2.9 ND
Ra-228 ND ND ND
7287
B206589
B206489
B106089
5987
B206189
6487
71693
6587
5887
B206289
77392
0986
1086
71893
6687
70593
70493
70393
70693
70893
1Q 2Q 3Q
Sr-89/90 .68 .023 ND
Ra-226 ND ND ND
Ra-228 ND ND ND
1Q 2Q 3Q
Sr-89/90 BDL .11 .44
Ra-226 ND ND ND
Ra-228 ND ND ND
1Q 2Q 3Q
Sr-89/90 BDL BDL -.0083
Ra-226 ND ND ND
Ra-228 ND ND ND
1Q 2Q 3Q
Sr-89/90 ND .3 ND
Ra-226 ND ND ND
Ra-228 ND ND ND
1Q 2Q 3Q
Sr-89/90 .014 -.12 ND
Ra-226 ND ND ND
Ra-228 ND ND ND
1Q 2Q 3Q
Sr-89/90 .095 .18 ND
Ra-226 ND ND ND
Ra-228 ND ND ND
1Q 2Q 3Q
Sr-89/90 BDL .099 .30
Ra-226 ND ND 1.1
Ra-228 ND ND ND
1Q 2Q 3Q
Sr-89/90 ND .029 ND
Ra-226 ND .37 ND
Ra-228 ND ND ND



	1Q	2Q	3Q
Sr-89/90	0.20	ND	.061
Ra-226	ND	ND	ND
Ra-228	ND	ND	ND

	1Q	2Q	3Q
Sr-89/90	BDL	.008	ND
Ra-226	.82	.45	ND
Ra-228	ND	ND	ND

	1Q	2Q	3Q
Sr-89/90	-.11	1.7	.17
Ra-226	0.6	.15	.43
Ra-228	ND	ND	ND

	1Q	2Q	3Q
Sr-89/90	ND	-.2	.064
Ra-226	ND	ND	ND
Ra-228	ND	ND	ND

	1Q	2Q	3Q
Sr-89/90	ND	ND	ND
Ra-226	.31	ND	ND
Ra-228	ND	ND	ND

EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Surface Water Diversion Ditch
- Slurry Wall
- Groundwater Intercept System (perforated)
- Groundwater Intercept System (unperf.)
- ND Data Not Available
- BDL Below Detection Limit
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells

Values exceeding background activity (mean + 2 st. dev.) shown in red.

Source: 1993 Annual RCRA Groundwater Monitoring Report

N

0 feet 250 500

U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado

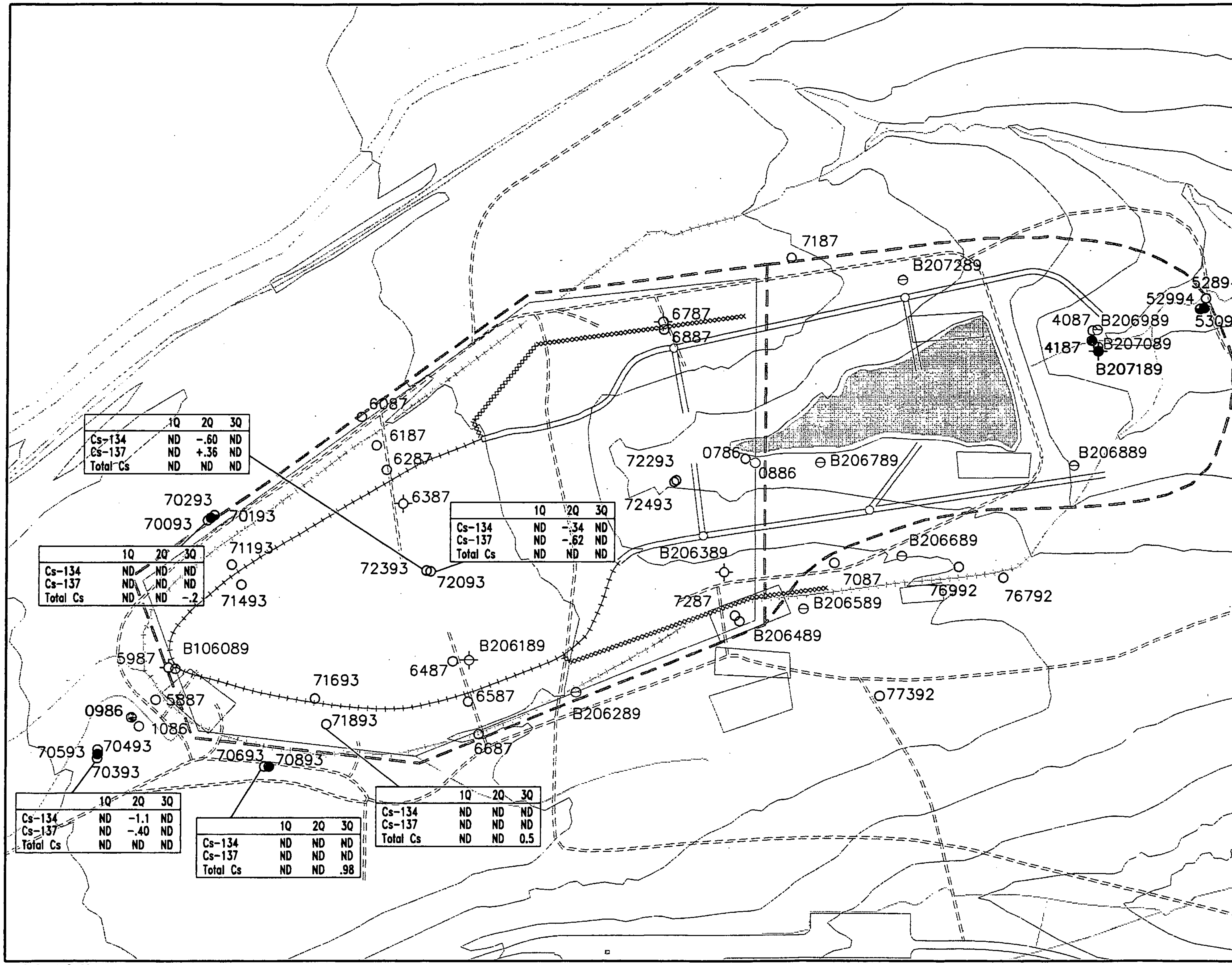
Present Landfill

1994 Annual RCRA Groundwater Monitoring Report

Dissolved Sr-89/90, Ra-226, and Ra-228 (pCi/L) in Groundwater UHSU Bedrock, 1994

Figure 5-21

Date: February 20, 1995



	1Q	2Q	3Q
Cs-134	ND	-.60	ND
Cs-137	ND	+.36	ND
Total Cs	ND	ND	ND

	1Q	2Q	3Q
Cs-134	ND	-.34	ND
Cs-137	ND	-.62	ND
Total Cs	ND	ND	ND

	1Q	2Q	3Q
Cs-134	ND	ND	ND
Cs-137	ND	ND	ND
Total Cs	ND	ND	-.2

	1Q	2Q	3Q
Cs-134	ND	-1.1	ND
Cs-137	ND	-.40	ND
Total Cs	ND	ND	ND

	1Q	2Q	3Q
Cs-134	ND	ND	ND
Cs-137	ND	ND	ND
Total Cs	ND	ND	.98

	1Q	2Q	3Q
Cs-134	ND	ND	ND
Cs-137	ND	ND	ND
Total Cs	ND	ND	0.5

EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Surface Water Diversion Ditch
- Slurry Wall
- Groundwater Intercept System (perforated)
- Groundwater Intercept System (unperf.)
- ND Data Not Available
- BDL Below Detection Limit
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells

Values exceeding background activity (mean + 2 st. dev.) shown in red.

Source: 1993 Annual RCRA Groundwater Monitoring Report

U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado

Present Landfill

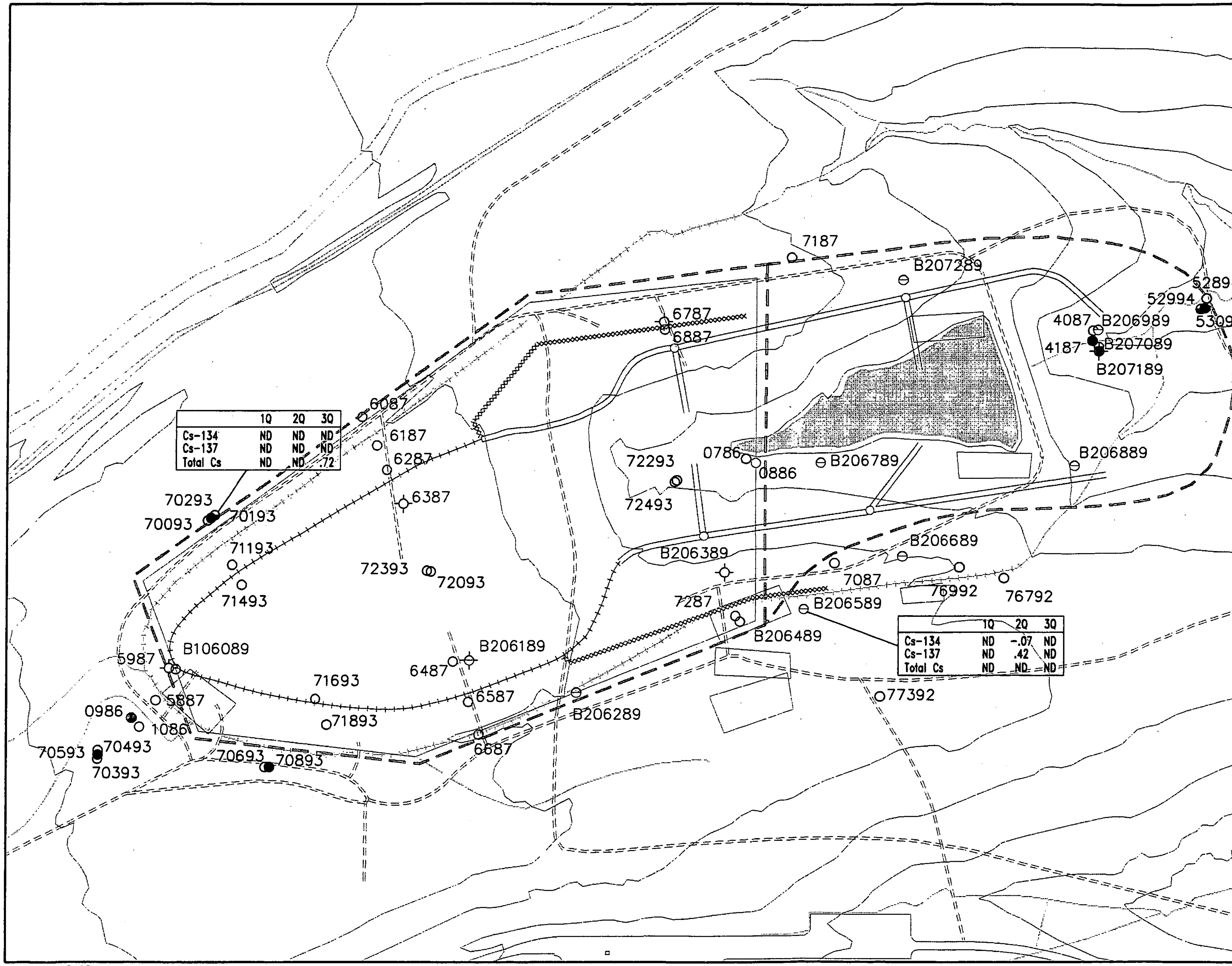
1994 Annual RCRA Groundwater Monitoring Report

Total Cs-137, Cs-134, and Total Radiocesium (pCi/L) in Groundwater UHSU Surficial Materials, 1994

Figure 5-22

Date: February 20, 1995

94 RCRA-A 5-22



	1Q	2Q	3Q
Cs-134	ND	ND	ND
Cs-137	ND	ND	ND
Total Cs	ND	ND	.72

	1Q	2Q	3Q
Cs-134	ND	-.07	ND
Cs-137	ND	.42	ND
Total Cs	ND	ND	ND

EXPLANATION

- ○ Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- ● Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Surface Water Diversion Ditch
- Slurry Wall
- Groundwater Intercept System (perforated)
- Groundwater Intercept System (unperf.)
- ND Data Not Available
- BDL Below Detection Limit
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells

Values exceeding background activity (mean + 2 st. dev.) shown in red.

Source: 1993 Annual RCRA Groundwater Monitoring Report

0 feet 250 500

U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado

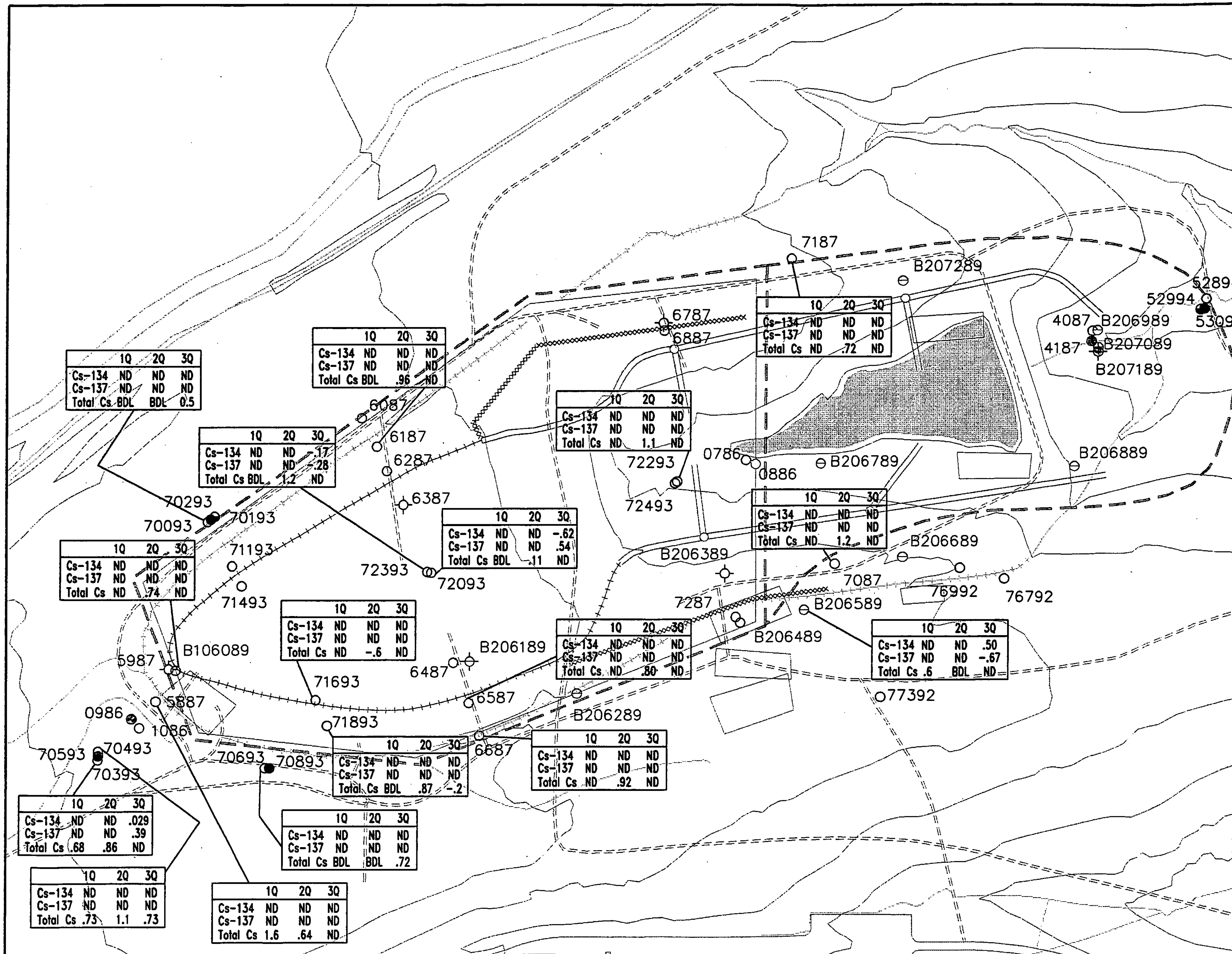
Present Landfill

1994 Annual RCRA Groundwater Monitoring Report

Total Cs-137, Cs-134, and Total Radiocesium (pCi/L) in Groundwater UHSU Bedrock, 1994

Figure 5-23

Date: February 20, 1995



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Surface Water Diversion Ditch
- Slurry Wall
- Groundwater Intercept System (perforated)
- Groundwater Intercept System (unperf.)
- ND Data Not Available
- BDL Below Detection Limit
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells

Values exceeding background activity (mean + 2 st. dev.) shown in red.

Source: 1993 Annual RCRA Groundwater Monitoring Report

0 feet 250 500

U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado

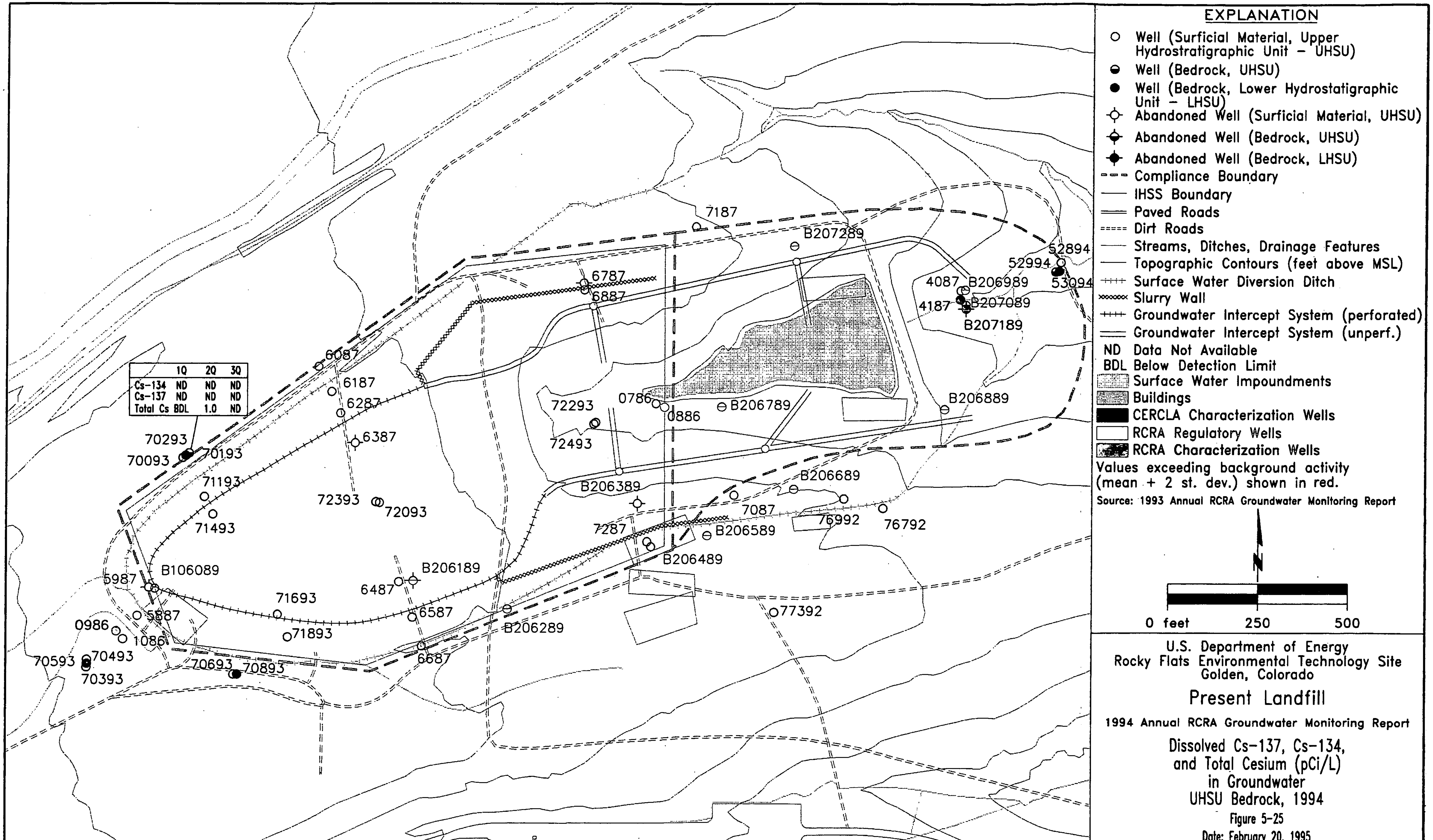
Present Landfill

1994 Annual RCRA Groundwater Monitoring Report

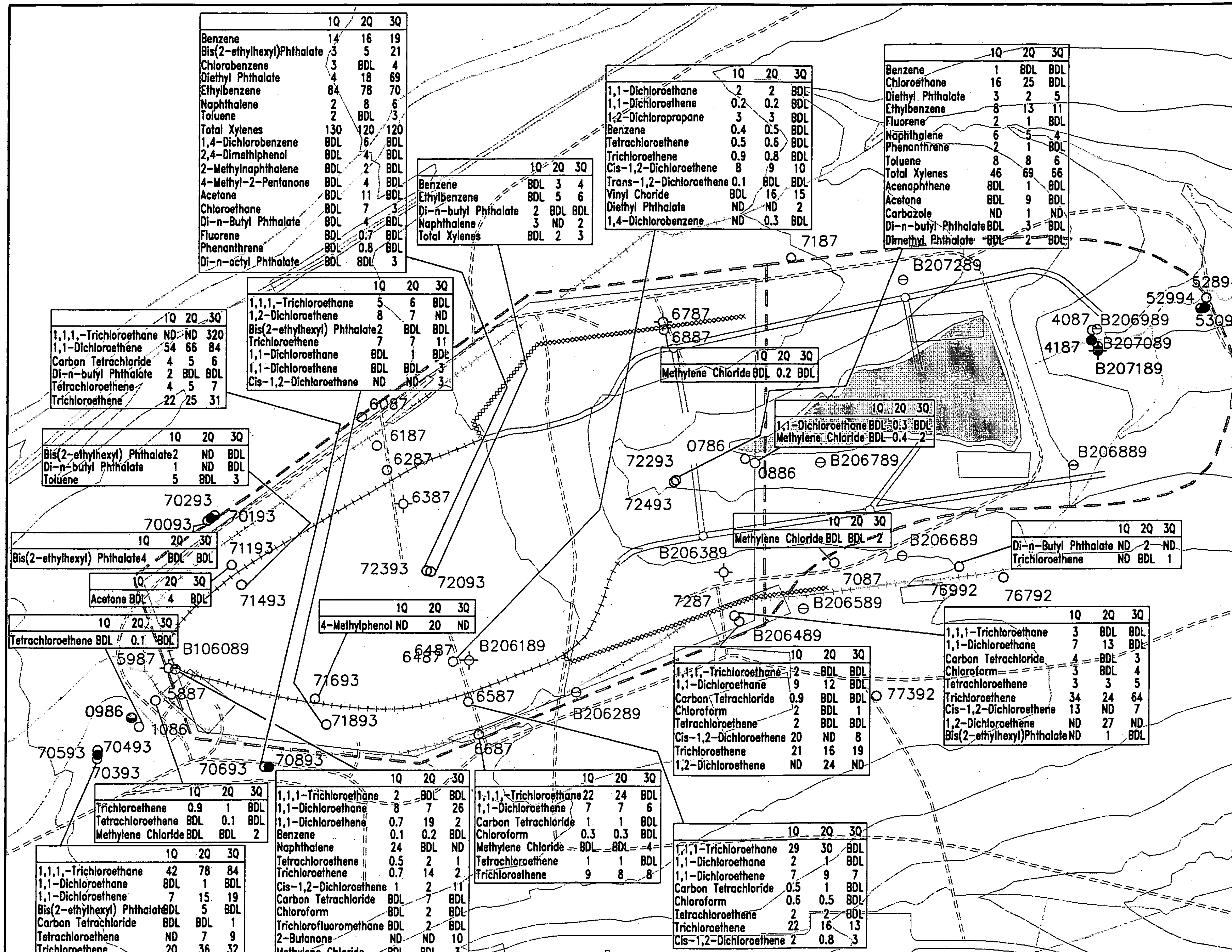
Dissolved Cs-137, Cs-134, and Total Radiocesium (pCi/L) in Groundwater UHSU Surficial Materials, 1994

Figure 5-24

Date: February 20, 1995



EXPLANATION
Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
Well (Bedrock, UHSU)
Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
Abandoned Well (Surficial Material, UHSU)
Abandoned Well (Bedrock, UHSU)
Abandoned Well (Bedrock, LHSU)
Compliance Boundary
IHSS Boundary
Paved Roads
Dirt Roads
Streams, Ditches, Drainage Features
Topographic Contours (feet above MSL)
Surface Water Diversion Ditch
Slurry Wall
Groundwater Intercept System (perforated)
Groundwater Intercept System (unperf.)
ND Data Not Available
BDL Below Detection Limit
Surface Water Impoundments
Buildings
CERCLA Characterization Wells
RCRA Regulatory Wells
RCRA Characterization Wells
Values exceeding background activity (mean + 2 st. dev.) shown in red.
Source: 1993 Annual RCRA Groundwater Monitoring Report
0 feet 250 500
	1Q	2Q	3Q
Cs-134	ND	ND	ND
Cs-137	ND	ND	ND
Total Cs	BDL	1.0	ND
7187
B207289
6787
6887
52894
52994
53094
4087
B206989
4187
B207089
B207189
6087
6187
6287
6387
72293
0786
0886
B206789
72493
B206889
70293
70093
70193
71193
71493
72393
72093
B206389
B206689
7087
76992
76792
7287
B206589
B206489
B106089
5987
B206189
6487
71693
6587
5587
0986
1086
71893
B206289
77392
70593
70493
70393
70693
70893
6687
U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado
Present Landfill
1994 Annual RCRA Groundwater Monitoring Report
Dissolved Cs-137, Cs-134, and Total Cesium (pCi/L) in Groundwater UHSU Bedrock, 1994
Figure 5-25
Date: February 20, 1995



	1Q	2Q	3Q
Benzene	14	16	19
Bis(2-ethylhexyl)Phthalate	3	5	21
Chlorobenzene	3	BDL	4
Diethyl Phthalate	4	18	69
Ethylbenzene	84	78	70
Naphthalene	2	8	6
Toluene	2	BDL	3
Total Xylenes	130	120	120
1,4-Dichlorobenzene	BDL	6	BDL
2,4-Dimethlphenol	BDL	4	BDL
2-Methylnaphthalene	BDL	2	BDL
4-Methyl-2-Pentanone	BDL	4	BDL
Acetone	BDL	11	BDL
Chloroethane	BDL	7	3
Di-n-Butyl Phthalate	BDL	4	BDL
Fluorene	BDL	0.7	BDL
Phenanthrene	BDL	0.8	BDL
Di-n-octyl Phthalate	BDL	BDL	3

	1Q	2Q	3Q
Benzene	BDL	3	4
Ethylbenzene	BDL	5	6
Di-n-butyl Phthalate	2	BDL	BDL
Naphthalene	3	ND	2
Total Xylenes	BDL	2	3

	1Q	2Q	3Q
1,1-Dichloroethane	2	2	BDL
1,1-Dichloroethene	0.2	0.2	BDL
1,2-Dichloropropane	3	3	BDL
Benzene	0.4	0.5	BDL
Tetrachloroethene	0.5	0.6	BDL
Trichloroethene	0.9	0.8	BDL
Cis-1,2-Dichloroethene	8	9	10
Trans-1,2-Dichloroethene	0.1	BDL	BDL
Vinyl Choride	BDL	16	15
Diethyl Phthalate	ND	ND	2
1,4-Dichlorobenzene	ND	0.3	BDL

	1Q	2Q	3Q
Benzene	1	BDL	BDL
Chloroethane	16	25	BDL
Diethyl Phthalate	3	2	5
Ethylbenzene	8	13	11
Fluorene	2	1	BDL
Naphthalene	6	5	4
Phenanthrene	2	1	BDL
Toluene	8	8	6
Total Xylenes	46	69	66
Acenaphthene	BDL	1	BDL
Acetone	BDL	9	BDL
Carbazole	ND	1	ND
Di-n-butyl Phthalate	BDL	3	BDL
Dimethyl Phthalate	BDL	2	BDL

	1Q	2Q	3Q
1,1,1-Trichloroethane	5	6	BDL
1,2-Dichloroethene	8	7	ND
Bis(2-ethylhexyl) Phthalate	2	BDL	BDL
Trichloroethene	7	7	11
1,1-Dichloroethane	BDL	1	BDL
1,1-Dichloroethene	BDL	BDL	3
Cis-1,2-Dichloroethene	ND	ND	3

	1Q	2Q	3Q
1,1,1-Trichloroethane	ND	ND	320
1,1-Dichloroethene	54	66	84
Carbon Tetrachloride	4	5	6
Di-n-butyl Phthalate	2	BDL	BDL
Tetrachloroethene	4	5	7
Trichloroethene	22	25	31

	1Q	2Q	3Q
Methylene Chloride	BDL	0.2	BDL

	1Q	2Q	3Q
1,1-Dichloroethane	BDL	0.3	BDL
Methylene Chloride	BDL	0.4	2

	1Q	2Q	3Q
Bis(2-ethylhexyl) Phthalate	2	ND	BDL
Di-n-butyl Phthalate	1	ND	BDL
Toluene	5	BDL	3

	1Q	2Q	3Q
Bis(2-ethylhexyl) Phthalate	4	BDL	BDL

	1Q	2Q	3Q
Acetone	BDL	4	BDL

	1Q	2Q	3Q
Tetrachloroethene	BDL	0.1	BDL

	1Q	2Q	3Q
4-Methylphenol	ND	20	ND

	1Q	2Q	3Q
Methylene Chloride	BDL	BDL	2

	1Q	2Q	3Q
Di-n-Butyl Phthalate	ND	2	ND
Trichloroethene	ND	BDL	1

	1Q	2Q	3Q
1,1,1-Trichloroethane	3	BDL	BDL
1,1-Dichloroethane	7	13	BDL
Carbon Tetrachloride	4	BDL	3
Chloroform	3	BDL	4
Tetrachloroethene	3	3	5
Trichloroethene	34	24	64
Cis-1,2-Dichloroethene	13	ND	7
1,2-Dichloroethene	ND	27	ND
Bis(2-ethylhexyl)Phthalate	ND	1	BDL

	1Q	2Q	3Q
1,1,1-Trichloroethane	2	BDL	BDL
1,1-Dichloroethane	9	12	BDL
Carbon Tetrachloride	0.9	BDL	BDL
Chloroform	2	BDL	1
Tetrachloroethene	2	BDL	BDL
Cis-1,2-Dichloroethene	20	ND	8
Trichloroethene	21	16	19
1,2-Dichloroethene	ND	24	ND

	1Q	2Q	3Q
Trichloroethene	0.9	1	BDL
Tetrachloroethene	BDL	0.1	BDL
Methylene Chloride	BDL	BDL	2

	1Q	2Q	3Q
1,1,1-Trichloroethane	42	78	84
1,1-Dichloroethane	BDL	1	BDL
1,1-Dichloroethene	7	15	19
Bis(2-ethylhexyl) Phthalate	BDL	5	BDL
Carbon Tetrachloride	BDL	BDL	1
Tetrachloroethene	ND	7	9
Trichloroethene	20	36	32

	1Q	2Q	3Q
1,1,1-Trichloroethane	2	BDL	BDL
1,1-Dichloroethane	8	7	26
1,1-Dichloroethene	0.7	19	2
Benzene	0.1	0.2	BDL
Naphthalene	24	BDL	ND
Tetrachloroethene	0.5	2	1
Trichloroethene	0.7	14	2
Cis-1,2-Dichloroethene	1	2	11
Carbon Tetrachloride	BDL	7	BDL
Chloroform	BDL	2	BDL
Trichlorofluoromethane	BDL	2	BDL
2-Butanone	ND	ND	10
Methylene Chloride	BDL	BDL	3

	1Q	2Q	3Q
1,1,1-Trichloroethane	22	24	BDL
1,1-Dichloroethene	7	7	6
Carbon Tetrachloride	1	1	BDL
Chloroform	0.3	0.3	BDL
Methylene Chloride	BDL	BDL	4
Tetrachloroethene	1	1	BDL
Trichloroethene	9	8	8

	1Q	2Q	3Q
1,1,1-Trichloroethane	29	30	BDL
1,1-Dichloroethane	2	1	BDL
1,1-Dichloroethene	7	9	7
Carbon Tetrachloride	0.5	1	BDL
Chloroform	0.6	0.5	BDL
Tetrachloroethene	2	2	BDL
Trichloroethene	22	16	13
Cis-1,2-Dichloroethene	2	0.8	3

EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Surface Water Diversion Ditch
- Slurry Wall
- Groundwater Intercept System (perforated)
- Groundwater Intercept System (unperf.)
- ND Data Not Available
- BDL Below Detection Limit
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells

Source: 1993 Annual RCRA Groundwater Monitoring Report

0 feet 250 500

U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado

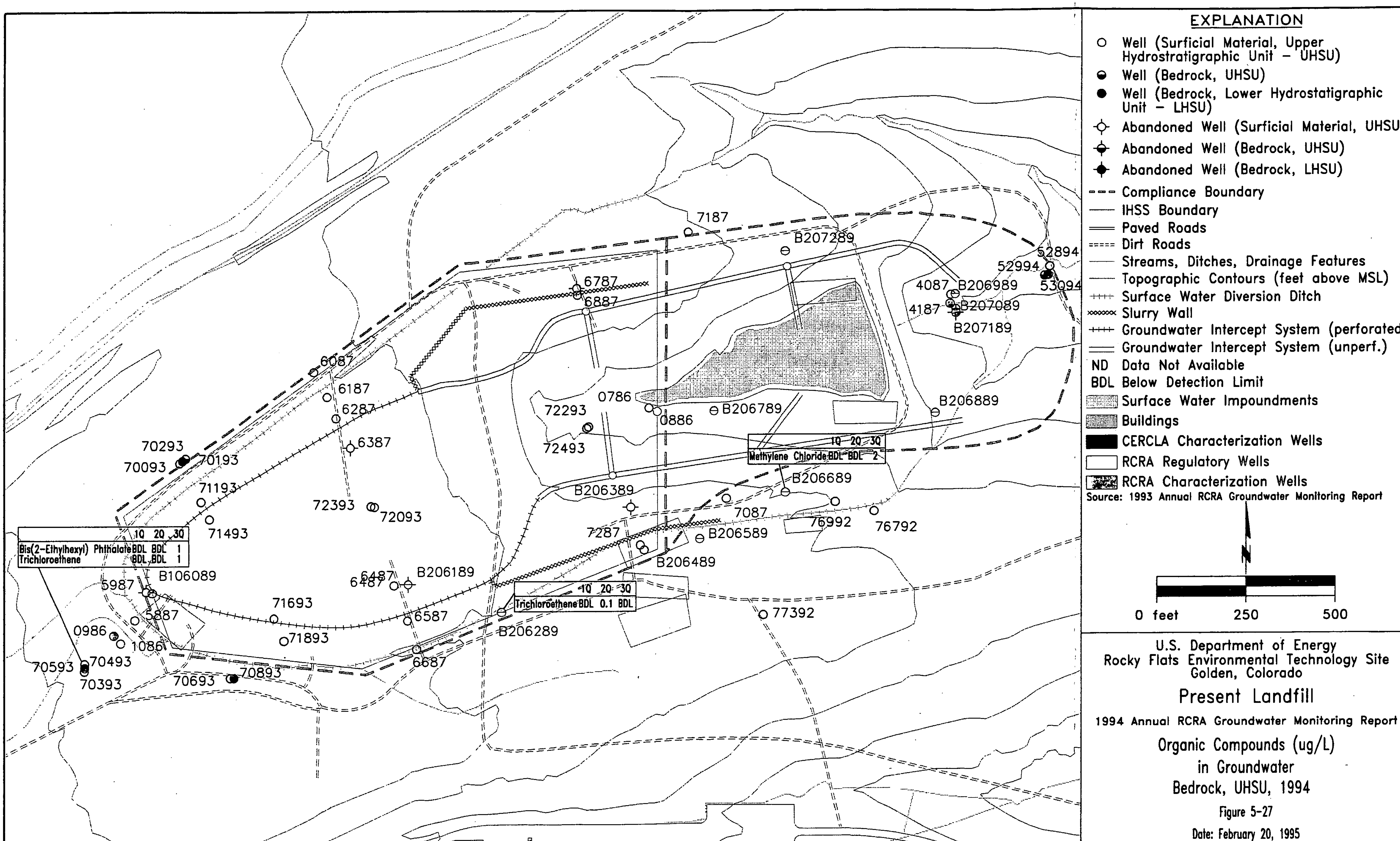
Present Landfill

1994 Annual RCRA Groundwater Monitoring Report

Organic Compounds (ug/L) in Groundwater Surficial Materials, UHSU, 1994

Figure 5-26

Date: February 20, 1995



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Rocky Flats Environmental Technology Site
Golden, Colorado

Present Landfill

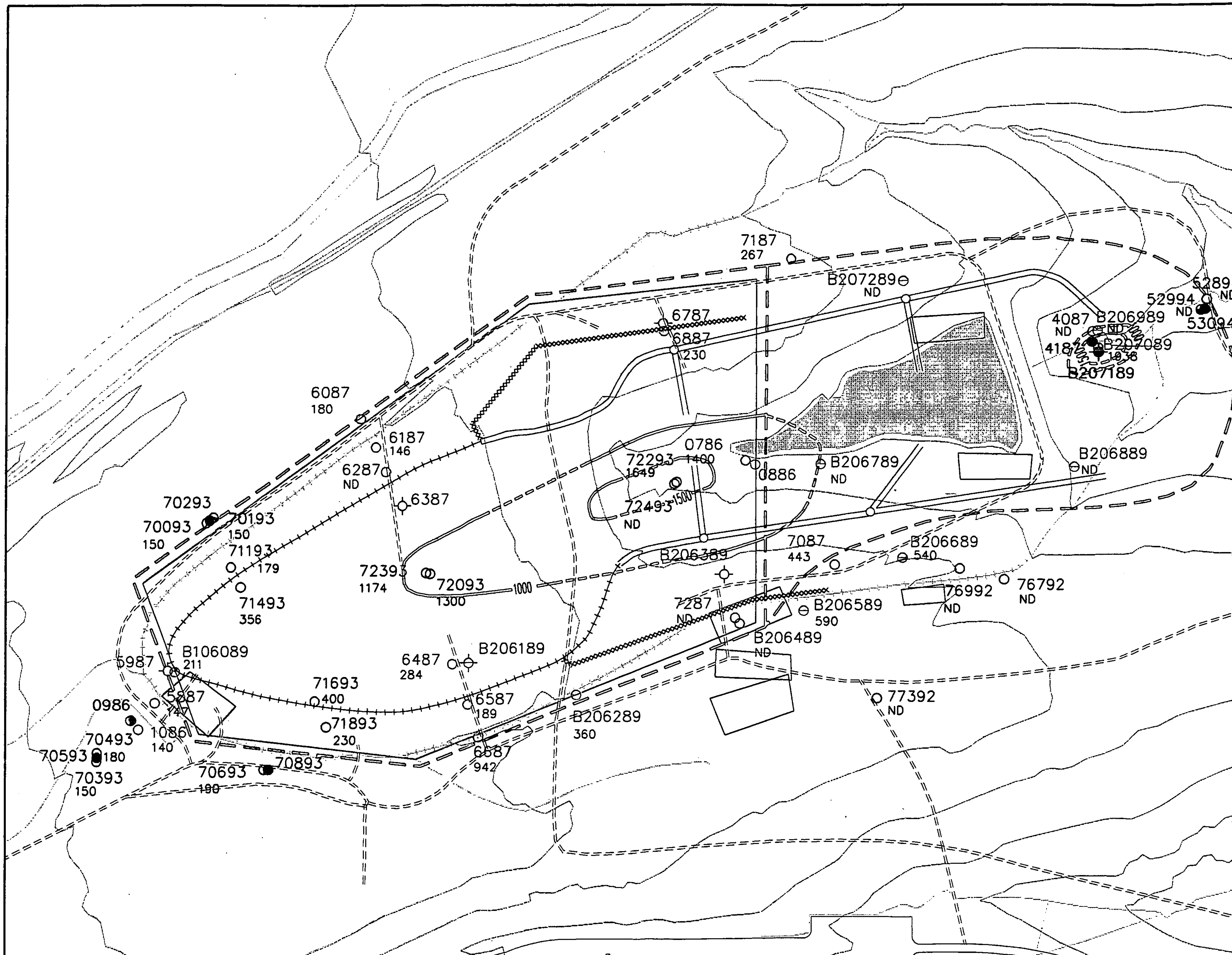
1994 Annual RCRA Groundwater Monitoring Report

Organic Compounds (ug/L)
in Groundwater
Bedrock, UHSU, 1994

Figure 5-27

Date: February 20, 1995

94 RCRA-A 5-27



EXPLANATION

- Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
- Well (Bedrock, UHSU)
- Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
- Abandoned Well (Surficial Material, UHSU)
- Abandoned Well (Bedrock, UHSU)
- Abandoned Well (Bedrock, LHSU)
- Compliance Boundary
- IHSS Boundary
- Paved Roads
- Dirt Roads
- Streams, Ditches, Drainage Features
- Topographic Contours (feet above MSL)
- Surface Water Diversion Ditch
- Slurry Wall
- Groundwater Intercept System (perforated)
- Groundwater Intercept System (unperf.)
- Isoconcentration Contours; Dashed Where Approximately Located
- ND No Data
- BDL Below Detection Limit
- Surface Water Impoundments
- Buildings
- CERCLA Characterization Wells
- RCRA Regulatory Wells
- RCRA Characterization Wells

Source: 1993 Annual RCRA Groundwater Monitoring Report

0 feet 250 500

U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado

Present Landfill

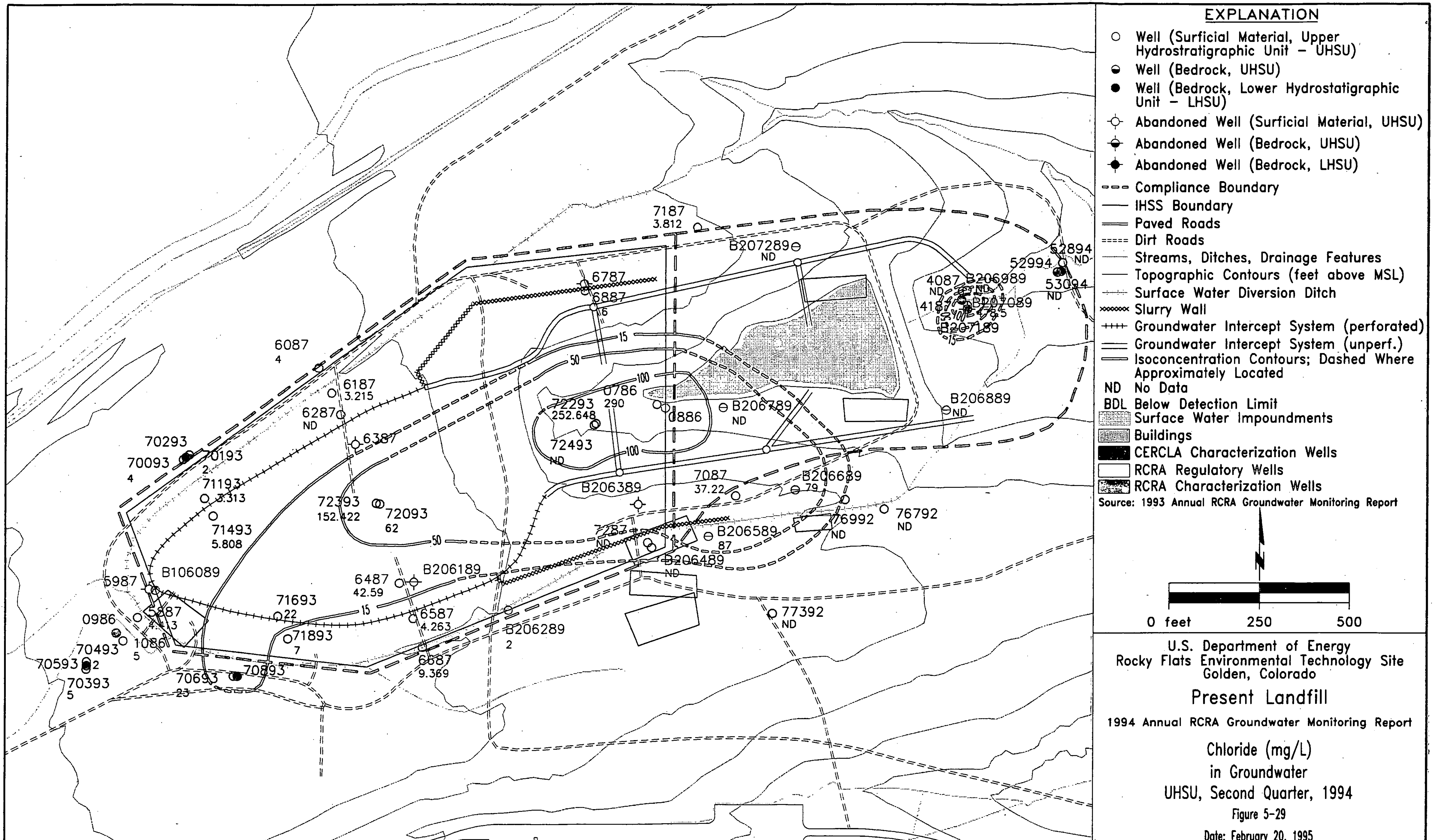
1994 Annual RCRA Groundwater Monitoring Report

Total Dissolved Solids (mg/L)
in Groundwater
UHSU, Second Quarter, 1994

Figure 5-28

Date: February 20, 1995

94 RCRA-A 5-28



U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado

Present Landfill

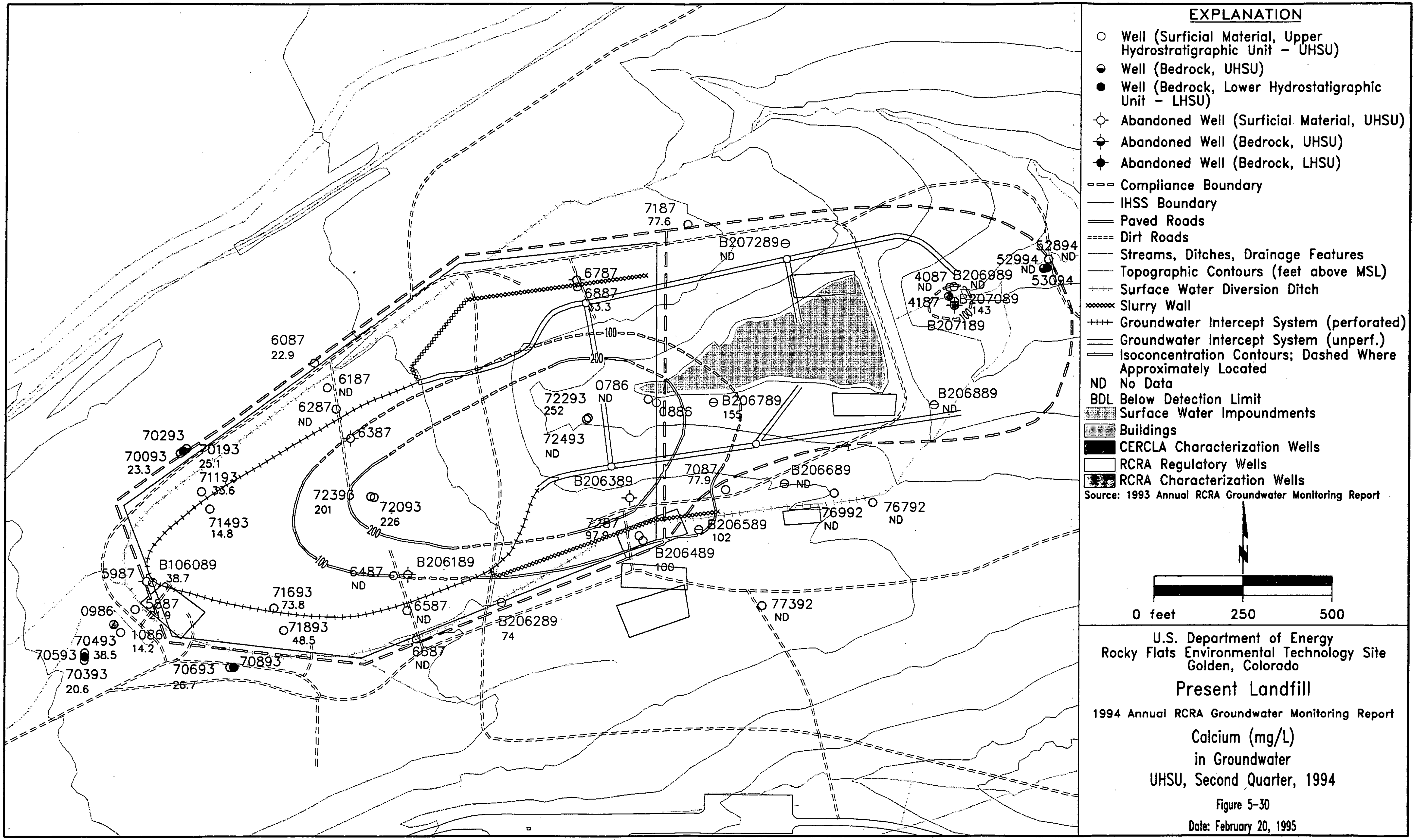
1994 Annual RCRA Groundwater Monitoring Report

Chloride (mg/L)
in Groundwater
UHSU, Second Quarter, 1994

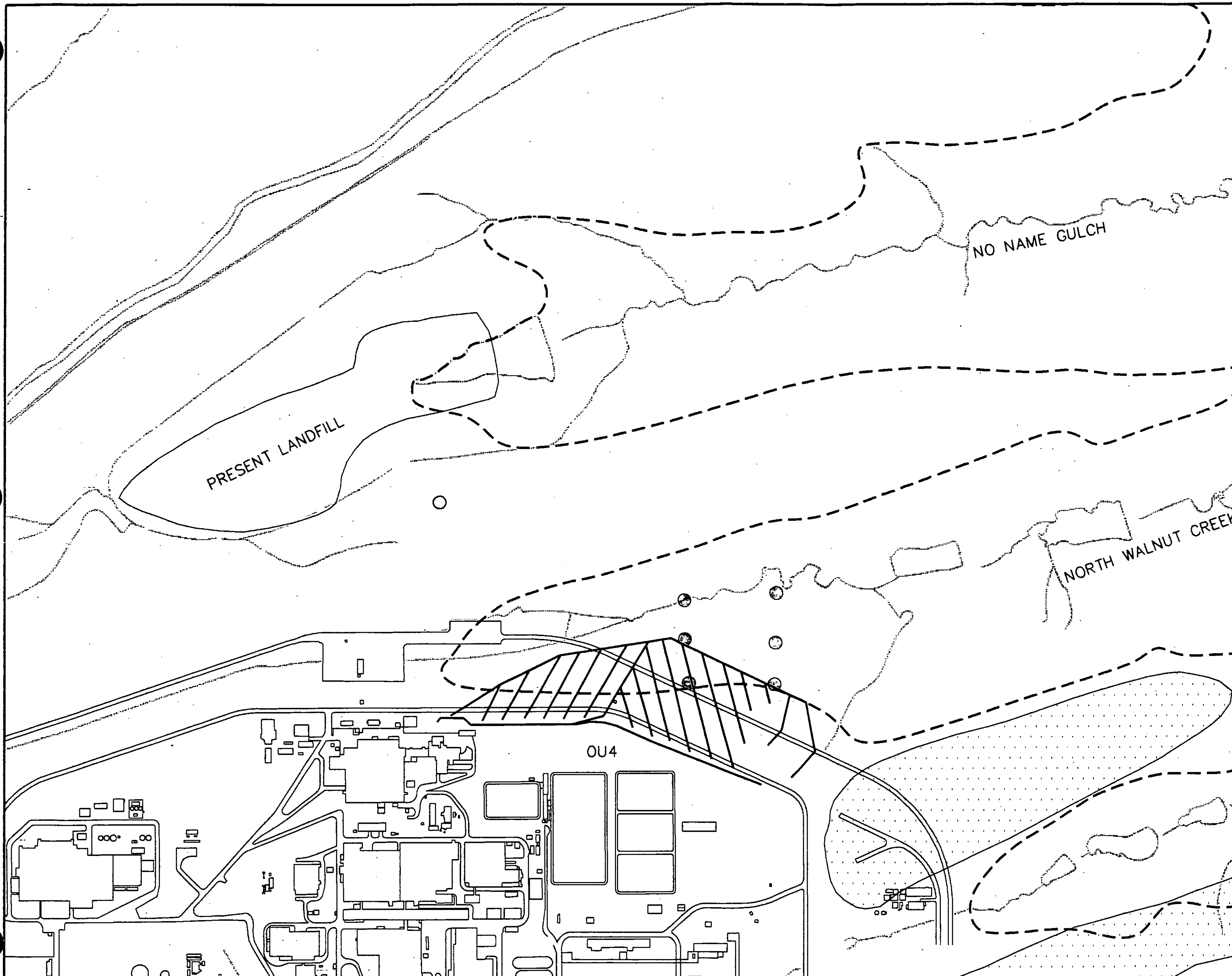
Figure 5-29

Date: February 20, 1995

94 RCRA-A 5-29


EXPLANATION
Well (Surficial Material, Upper Hydrostratigraphic Unit – UHSU)
Well (Bedrock, UHSU)
Well (Bedrock, Lower Hydrostatigraphic Unit – LHSU)
Abandoned Well (Surficial Material, UHSU)
Abandoned Well (Bedrock, UHSU)
Abandoned Well (Bedrock, LHSU)
Compliance Boundary
IHSS Boundary
Paved Roads
Dirt Roads
Streams, Ditches, Drainage Features
Topographic Contours (feet above MSL)
Surface Water Diversion Ditch
Slurry Wall
Groundwater Intercept System (perforated)
Groundwater Intercept System (unperf.)
Isoconcentration Contours; Dashed Where Approximately Located
ND No Data
BDL Below Detection Limit
Surface Water Impoundments
Buildings
CERCLA Characterization Wells
RCRA Regulatory Wells
RCRA Characterization Wells
Source: 1993 Annual RCRA Groundwater Monitoring Report
0 feet 250 500
U.S. Department of Energy
Rocky Flats Environmental Technology Site
Golden, Colorado
Present Landfill
1994 Annual RCRA Groundwater Monitoring Report
Calcium (mg/L)
in Groundwater
UHSU, Second Quarter, 1994
Figure 5-30
Date: February 20, 1995

94 RCRA-A 5-30



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Rocky Flats
Environmental Technology Site

Proposed New Monitoring Well Location Map

LEGEND

Surface Water Feature

Intercepter Trench System

Extent of Rocky Flats Alluvium

Unsaturated Areas

Monitoring Well–Single Completion Completion In Alluvium

Monitoring Well Cluster–Triple Completion
One Completion In Alluvium
One Completion 15 Feet Into Bedrock
One Completion 30–40 Feet Into Bedrock

Source: Base Maps From 1993 Annual RCRA Groundwater Monitoring Report

TN
12°

250 0 500 1000
Feet
State Plane Coordinate Projection

1994 Well Evaluation Report

Figure 6-1

Date: February 20, 1995

APPENDIX A

GROUNDWATER POTENTIOMETRIC-HEAD DATA FOR 1994

APPENDIX A

Groundwater potentiometric-head data for the 1994 Annual RCRA Groundwater Monitoring Report are included on a 3 1/2-inch disk. The file is located in an executable ZIP file and can be restored by typing INSTALL.BAT from the B: DOS prompt.

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
PLF	0586	03-JAN-94	11.34	5726.37	5715.03	5714.62	QUARTERLY WATER LEVEL
PLF	0586	03-MAR-94	11.21	5726.37	5715.16	5714.62	
PLF	0586	04-APR-94	11.23	5726.37	5715.14	5714.62	QUARTERLY WATER LEVEL
PLF	0586	03-MAY-94	4.38	5726.37	5721.99	5714.62	
PLF	0586	11-JUL-94	10.11	5726.37	5716.26	5714.62	QUARTERLY WATER LEVEL
PLF	0586	07-AUG-94	10.53	5726.37	5715.84	5714.62	
PLF	0586	14-SEP-94	10.83	5726.37	5715.54	5714.62	
PLF	0586	06-OCT-94	11.15	5726.37	5715.22	5714.62	QUARTERLY WATER LEVEL
PLF	0686	03-JAN-94	11.34	5816.72	5805.38	5805.80	QUARTERLY WATER LEVEL
PLF	0686	04-APR-94	11.36	5816.72	5805.36	5805.80	QUARTERLY WATER LEVEL
PLF	0686	12-JUL-94	10.58	5816.72	5806.14	5805.80	QUARTERLY WATER LEVEL
PLF	0686	23-AUG-94	10.91	5816.72	5805.81	5805.80	
PLF	0686	03-OCT-94	-1.00	5816.72	DRY	5805.80	QUARTERLY WATER LEVEL
PLF	0786	04-JAN-94	5.51	5926.54	5921.03	5919.20	QUARTERLY WATER LEVEL
PLF	0786	17-JAN-94	5.53	5926.54	5921.01	5919.20	
PLF	0786	11-APR-94	4.50	5926.54	5922.04	5919.20	
PLF	0786	04-APR-94	4.99	5926.54	5921.55	5919.20	QUARTERLY WATER LEVEL
PLF	0786	12-JUL-94	6.28	5926.54	5920.26	5919.20	QUARTERLY WATER LEVEL
PLF	0786	27-JUL-94	6.19	5926.54	5920.35	5919.20	
PLF	0786	03-OCT-94	7.59	5926.54	5918.95	5919.20	QUARTERLY WATER LEVEL
PLF	0886	04-JAN-94	40.70	5926.90	5886.20	5861.81	QUARTERLY WATER LEVEL
PLF	0886	25-JAN-94	61.64	5926.90	5865.26	5861.81	
PLF	0886	11-APR-94	43.44	5926.90	5883.46	5861.81	
PLF	0886	04-APR-94	45.06	5926.90	5881.84	5861.81	QUARTERLY WATER LEVEL
PLF	0886	12-JUL-94	40.58	5926.90	5886.32	5861.81	QUARTERLY WATER LEVEL
PLF	0886	02-AUG-94	36.80	5926.90	5890.10	5861.81	
PLF	0886	03-OCT-94	47.52	5926.90	5879.38	5861.81	QUARTERLY WATER LEVEL
PLF	0886	17-OCT-94	44.49	5926.90	5882.41	5861.81	
PLF	0986	05-JAN-94	33.58	5998.23	5964.65	5861.04	QUARTERLY WATER LEVEL
PLF	0986	28-FEB-94	31.82	5998.23	5966.41	5861.04	
PLF	0986	05-APR-94	37.81	5998.23	5960.42	5861.04	QUARTERLY WATER LEVEL
PLF	0986	18-APR-94	34.77	5998.23	5963.46	5861.04	
PLF	0986	13-JUL-94	33.36	5998.23	5964.87	5861.04	QUARTERLY WATER LEVEL
PLF	0986	07-AUG-94	32.73	5998.23	5965.50	5861.04	
PLF	0986	03-OCT-94	34.75	5998.23	5963.48	5861.04	QUARTERLY WATER LEVEL
PLF	0986	12-OCT-94	34.06	5998.23	5964.17	5861.04	
PLF	1086	04-JAN-94	14.28	5998.19	5983.91	5972.84	QUARTERLY WATER LEVEL
PLF	1086	18-JAN-94	14.58	5998.19	5983.61	5972.84	
PLF	1086	02-FEB-94	14.70	5998.19	5983.49	5972.84	MONTHLY WATER LEVEL
PLF	1086	21-FEB-94	14.45	5998.19	5983.74	5972.84	
PLF	1086	02-MAR-94	25.71	5998.19	5972.48	5972.84	MONTHLY WATER LEVEL/<.3FT TECHNICALLY DRY
PLF	1086	05-APR-94	11.56	5998.19	5986.63	5972.84	QUARTERLY WATER LEVEL

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
PLF	1086	11-APR-94	11.16	5998.19	5987.03	5972.84	
PLF	1086	02-MAY-94	6.41	5998.19	5991.78	5972.84	MONTHLY WATER LEVEL
PLF	1086	06-JUN-94	9.21	5998.19	5988.98	5972.84	MONTHLY WATER LEVEL
PLF	1086	13-JUL-94	10.94	5998.19	5987.25	5972.84	QUARTERLY WATER LEVEL
PLF	1086	01-AUG-94	11.78	5998.19	5986.41	5972.84	MONTHLY WATER LEVEL
PLF	1086	02-AUG-94	11.74	5998.19	5986.45	5972.84	
PLF	1086	02-SEP-94	13.00	5998.19	5985.19	5972.84	MONTHLY WATER LEVEL
PLF	1086	03-OCT-94	13.90	5998.19	5984.29	5972.84	QUARTERLY WATER LEVEL
PLF	1086	13-OCT-94	14.14	5998.19	5984.05	5972.84	
PLF	1086	03-NOV-94	-1.00	5998.19	DRY	5972.84	MONTHLY WATER LEVEL
PLF	4087	02-MAR-94	0.00	5884.61	5884.61	5876.54	PLUGGED WELL
PLF	4087	04-APR-94	0.00	5884.61	5884.61	5876.54	QUARTERLY WATER LEVEL/WELL PLUGGED, CAN'
PLF	4087	02-MAY-94	0.00	5884.61	5884.61	5876.54	MONTHLY WATER LEVEL
PLF	4087	02-JUN-94	5.41	5884.61	5879.20	5876.54	MONTHLY WATER LEVEL
PLF	4087	11-JUL-94	6.58	5884.61	5878.03	5876.54	QUARTERLY WATER LEVEL
PLF	4087	14-JUL-94	6.67	5884.61	5877.94	5876.54	
PLF	4087	28-JUL-94	7.86	5884.61	5876.75	5876.54	
PLF	4087	01-AUG-94	-1.00	5884.61	DRY	5876.54	MONTHLY WATER LEVEL
PLF	4087	25-AUG-94	8.27	5884.61	5876.34	5876.54	<.3FT TECHNICALLY DRY
PLF	4087	02-SEP-94	8.23	5884.61	5876.38	5876.54	MONTHLY WATER LEVEL
PLF	4087	03-OCT-94	8.30	5884.61	5876.31	5876.54	QUARTERLY WATER LEVEL
PLF	4087	02-NOV-94	-1.00	5884.61	DRY	5876.54	MONTHLY WATER LEVEL
PLF	4187	04-JAN-94	47.63	5884.49	5836.86	5789.16	QUARTERLY WATER LEVEL
PLF	4187	25-JAN-94	44.28	5884.49	5840.21	5789.16	
PLF	4187	04-APR-94	44.93	5884.49	5839.56	5789.16	QUARTERLY WATER LEVEL
PLF	4187	13-APR-94	42.35	5884.49	5842.14	5789.16	
PLF	4187	11-JUL-94	40.16	5884.49	5844.33	5789.16	QUARTERLY WATER LEVEL
PLF	4187	02-AUG-94	36.37	5884.49	5848.12	5789.16	
PLF	4187	03-OCT-94	47.84	5884.49	5836.65	5789.16	QUARTERLY WATER LEVEL
PLF	4187	17-OCT-94	43.28	5884.49	5841.21	5789.16	
PLF	4287	04-JAN-94	4.06	5855.87	5851.81	5847.98	QUARTERLY WATER LEVEL
PLF	4287	18-JAN-94	3.86	5855.87	5852.01	5847.98	
PLF	4287	02-FEB-94	3.54	5855.87	5852.33	5847.98	MONTHLY WATER LEVEL
PLF	4287	07-MAR-94	3.30	5855.87	5852.57	5847.98	MONTHLY WATER LEVEL
PLF	4287	04-APR-94	3.39	5855.87	5852.48	5847.98	QUARTERLY WATER LEVEL
PLF	4287	02-MAY-94	3.50	5855.87	5852.37	5847.98	MONTHLY WATER LEVEL
PLF	4287	17-MAY-94	4.13	5855.87	5851.74	5847.98	
PLF	4287	06-JUN-94	5.51	5855.87	5850.36	5847.98	MONTHLY WATER LEVEL
PLF	4287	11-JUL-94	-1.00	5855.87	DRY	5847.98	QUARTERLY WATER LEVEL
PLF	4287	28-JUL-94	-1.00	5855.87	DRY	5847.98	
PLF	4287	01-AUG-94	-1.00	5855.87	DRY	5847.98	MONTHLY WATER LEVEL
PLF	4287	02-SEP-94	-1.00	5855.87	DRY	5847.98	MONTHLY WATER LEVEL

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
PLF	4287	03-OCT-94	-1.00	5855.87	DRY	5847.98	QUARTERLY WATER LEVEL
PLF	4287	02-NOV-94	-1.00	5855.87	DRY	5847.98	MONTHLY WATER LEVEL
PLF	5887	04-JAN-94	14.31	5996.77	5982.46	5973.20	QUARTERLY WATER LEVEL
PLF	5887	18-JAN-94	14.57	5996.77	5982.20	5973.20	
PLF	5887	07-APR-94	11.28	5996.77	5985.49	5973.20	
PLF	5887	05-APR-94	11.43	5996.77	5985.34	5973.20	QUARTERLY WATER LEVEL
PLF	5887	13-JUL-94	11.57	5996.77	5985.20	5973.20	QUARTERLY WATER LEVEL
PLF	5887	27-JUL-94	12.03	5996.77	5984.74	5973.20	
PLF	5887	03-OCT-94	14.04	5996.77	5982.73	5973.20	QUARTERLY WATER LEVEL
PLF	5887	13-OCT-94	14.25	5996.77	5982.52	5973.20	
PLF	6087	04-JAN-94	14.01	5985.96	5971.95	5956.97	QUARTERLY WATER LEVEL
PLF	6087	14-FEB-94	14.17	5985.96	5971.79	5956.97	
PLF	6087	05-APR-94	11.83	5985.96	5974.13	5956.97	QUARTERLY WATER LEVEL
PLF	6087	14-APR-94	8.74	5985.96	5977.22	5956.97	
PLF	6087	12-JUL-94	12.51	5985.96	5973.45	5956.97	QUARTERLY WATER LEVEL
PLF	6087	09-AUG-94	13.14	5985.96	5972.82	5956.97	
PLF	6087	19-AUG-94	13.41	5985.96	5972.55	5956.97	
PLF	6087	03-OCT-94	13.89	5985.96	5972.07	5956.97	QUARTERLY WATER LEVEL
PLF	6087	13-OCT-94	13.94	5985.96	5972.02	5956.97	
PLF	6187	04-JAN-94	13.81	5985.77	5971.96	5956.18	QUARTERLY WATER LEVEL
PLF	6187	25-JAN-94	14.04	5985.77	5971.73	5956.18	
PLF	6187	04-APR-94	12.26	5985.77	5973.51	5956.18	QUARTERLY WATER LEVEL
PLF	6187	19-APR-94	10.42	5985.77	5975.35	5956.18	
PLF	6187	12-JUL-94	12.89	5985.77	5972.88	5956.18	QUARTERLY WATER LEVEL
PLF	6187	10-AUG-94	13.34	5985.77	5972.43	5956.18	
PLF	6187	19-AUG-94	13.30	5985.77	5972.47	5956.18	
PLF	6187	12-OCT-94	13.80	5985.77	5971.97	5956.18	
PLF	6187	10-OCT-94	13.84	5985.77	5971.93	5956.18	QUARTERLY WATER LEVEL
PLF	6287	04-JAN-94	14.89	5986.37	5971.48	5957.98	QUARTERLY WATER LEVEL
PLF	6287	04-APR-94	13.60	5986.37	5972.77	5957.98	QUARTERLY WATER LEVEL
PLF	6287	12-JUL-94	14.12	5986.37	5972.25	5957.98	QUARTERLY WATER LEVEL
PLF	6287	03-AUG-94	14.42	5986.37	5971.95	5957.98	
PLF	6287	10-OCT-94	14.79	5986.37	5971.58	5957.98	QUARTERLY WATER LEVEL
PLF	6487	04-JAN-94	21.41	5987.34	5965.93	5962.76	QUARTERLY WATER LEVEL
PLF	6487	02-FEB-94	21.49	5987.34	5965.85	5962.76	MONTHLY WATER LEVEL
PLF	6487	28-FEB-94	21.71	5987.34	5965.63	5962.76	
PLF	6487	01-MAR-94	21.71	5987.34	5965.63	5962.76	MONTHLY WATER LEVEL
PLF	6487	04-APR-94	21.58	5987.34	5965.76	5962.76	QUARTERLY WATER LEVEL
PLF	6487	18-APR-94	21.70	5987.34	5965.64	5962.76	
PLF	6487	02-MAY-94	21.67	5987.34	5965.67	5962.76	MONTHLY WATER LEVEL
PLF	6487	06-JUN-94	21.32	5987.34	5966.02	5962.76	MONTHLY WATER LEVEL
PLF	6487	12-JUL-94	21.46	5987.34	5965.88	5962.76	QUARTERLY WATER LEVEL

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
PLF	6487	20-JUL-94	21.60	5987.34	5965.74	5962.76	
PLF	6487	01-AUG-94	21.66	5987.34	5965.68	5962.76	MONTHLY WATER LEVEL
PLF	6487	02-SEP-94	21.65	5987.34	5965.69	5962.76	MONTHLY WATER LEVEL
PLF	6487	13-OCT-94	21.66	5987.34	5965.68	5962.76	
PLF	6487	10-OCT-94	21.74	5987.34	5965.60	5962.76	QUARTERLY WATER LEVEL
PLF	6487	02-NOV-94	21.50	5987.34	5965.84	5962.76	MONTHLY WATER LEVEL
PLF	6587	04-JAN-94	14.78	5984.99	5970.21	5959.52	QUARTERLY WATER LEVEL
PLF	6587	28-FEB-94	14.80	5984.99	5970.19	5959.52	
PLF	6587	04-APR-94	12.99	5984.99	5972.00	5959.52	QUARTERLY WATER LEVEL
PLF	6587	19-APR-94	11.30	5984.99	5973.69	5959.52	
PLF	6587	12-JUL-94	13.66	5984.99	5971.33	5959.52	QUARTERLY WATER LEVEL
PLF	6587	15-AUG-94	14.29	5984.99	5970.70	5959.52	
PLF	6587	14-OCT-94	15.35	5984.99	5969.64	5959.52	
PLF	6587	10-OCT-94	15.36	5984.99	5969.63	5959.52	QUARTERLY WATER LEVEL
PLF	6687	04-JAN-94	13.40	5983.67	5970.27	5964.30	QUARTERLY WATER LEVEL
PLF	6687	28-FEB-94	13.50	5983.67	5970.17	5964.30	
PLF	6687	05-APR-94	11.71	5983.67	5971.96	5964.30	QUARTERLY WATER LEVEL
PLF	6687	18-APR-94	9.68	5983.67	5973.99	5964.30	
PLF	6687	12-JUL-94	12.39	5983.67	5971.28	5964.30	QUARTERLY WATER LEVEL
PLF	6687	26-JUL-94	12.87	5983.67	5970.80	5964.30	
PLF	6687	13-OCT-94	14.11	5983.67	5969.56	5964.30	
PLF	6687	10-OCT-94	14.18	5983.67	5969.49	5964.30	QUARTERLY WATER LEVEL
PLF	6887	04-JAN-94	10.17	5970.32	5960.15	5953.16	QUARTERLY WATER LEVEL
PLF	6887	04-APR-94	9.00	5970.32	5961.32	5953.16	QUARTERLY WATER LEVEL
PLF	6887	15-APR-94	8.09	5970.32	5962.23	5953.16	
PLF	6887	13-JUL-94	10.35	5970.32	5959.97	5953.16	QUARTERLY WATER LEVEL
PLF	6887	02-AUG-94	10.68	5970.32	5959.64	5953.16	
PLF	6887	10-OCT-94	10.88	5970.32	5959.44	5953.16	QUARTERLY WATER LEVEL
PLF	6887	18-OCT-94	10.85	5970.32	5959.47	5953.16	
PLF	70093	04-JAN-94	15.55	5992.90	5977.35	5968.90	QUARTERLY WATER LEVEL
PLF	70093	04-MAR-94	14.70	5992.90	5978.20	5968.90	
PLF	70093	07-MAR-94	14.61	5992.90	5978.29	5968.90	
PLF	70093	05-APR-94	14.08	5992.90	5978.82	5968.90	QUARTERLY WATER LEVEL
PLF	70093	29-APR-94	11.67	5992.90	5981.23	5968.90	
PLF	70093	13-JUL-94	13.69	5992.90	5979.21	5968.90	QUARTERLY WATER LEVEL
PLF	70093	29-AUG-94	14.61	5992.90	5978.29	5968.90	
PLF	70093	03-OCT-94	15.19	5992.90	5977.71	5968.90	QUARTERLY WATER LEVEL
PLF	70093	31-OCT-94	15.46	5992.90	5977.44	5968.90	
PLF	70193	04-JAN-94	15.11	5992.00	5976.89	5952.70	QUARTERLY WATER LEVEL
PLF	70193	04-MAR-94	14.56	5992.00	5977.44	5952.70	
PLF	70193	07-MAR-94	15.98	5992.00	5976.02	5952.70	
PLF	70193	05-APR-94	13.85	5992.00	5978.15	5952.70	QUARTERLY WATER LEVEL

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
PLF	70193	29-APR-94	11.58	5992.00	5980.42	5952.70	
PLF	70193	13-JUL-94	13.13	5992.00	5978.87	5952.70	QUARTERLY WATER LEVEL
PLF	70193	26-AUG-94	13.97	5992.00	5978.03	5952.70	
PLF	70193	03-OCT-94	14.53	5992.00	5977.47	5952.70	QUARTERLY WATER LEVEL
PLF	70193	01-NOV-94	14.81	5992.00	5977.19	5952.70	
PLF	70293	04-JAN-94	21.53	5995.10	5973.57	5926.00	QUARTERLY WATER LEVEL
PLF	70293	14-MAR-94	19.82	5995.10	5975.28	5926.00	
PLF	70293	05-APR-94	22.17	5995.10	5972.93	5926.00	QUARTERLY WATER LEVEL
PLF	70293	21-APR-94	20.97	5995.10	5974.13	5926.00	
PLF	70293	13-JUL-94	20.81	5995.10	5974.29	5926.00	QUARTERLY WATER LEVEL
PLF	70293	21-AUG-94	20.86	5995.10	5974.24	5926.00	
PLF	70293	03-OCT-94	22.09	5995.10	5973.01	5926.00	QUARTERLY WATER LEVEL
PLF	70293	24-OCT-94	21.55	5995.10	5973.55	5926.00	
PLF	70393	04-JAN-94	13.80	6000.10	5986.30	5975.10	QUARTERLY WATER LEVEL
PLF	70393	18-MAR-94	12.86	6000.10	5987.24	5975.10	
PLF	70393	21-MAR-94	12.74	6000.10	5987.36	5975.10	
PLF	70393	05-APR-94	12.37	6000.10	5987.73	5975.10	QUARTERLY WATER LEVEL
PLF	70393	04-MAY-94	7.99	6000.10	5992.11	5975.10	
PLF	70393	13-JUL-94	10.68	6000.10	5989.42	5975.10	QUARTERLY WATER LEVEL
PLF	70393	19-JUL-94	10.94	6000.10	5989.16	5975.10	
PLF	70393	03-OCT-94	13.56	6000.10	5986.54	5975.10	QUARTERLY WATER LEVEL
PLF	70393	31-OCT-94	14.11	6000.10	5985.99	5975.10	
PLF	70493	04-JAN-94	14.22	6000.00	5985.78	5954.00	QUARTERLY WATER LEVEL
PLF	70493	14-MAR-94	14.92	6000.00	5985.08	5954.00	
PLF	70493	05-APR-94	14.70	6000.00	5985.30	5954.00	QUARTERLY WATER LEVEL
PLF	70493	06-JUN-94	10.41	6000.00	5989.59	5954.00	
PLF	70493	21-JUN-94	11.85	6000.00	5988.15	5954.00	
PLF	70493	13-JUL-94	11.71	6000.00	5988.29	5954.00	QUARTERLY WATER LEVEL
PLF	70493	25-AUG-94	12.15	6000.00	5987.85	5954.00	
PLF	70493	03-OCT-94	13.10	6000.00	5986.90	5954.00	QUARTERLY WATER LEVEL
PLF	70493	24-OCT-94	13.40	6000.00	5986.60	5954.00	
PLF	70593	04-JAN-94	53.86	6000.00	5946.14	5862.00	QUARTERLY WATER LEVEL
PLF	70593	14-MAR-94	40.17	6000.00	5959.83	5862.00	
PLF	70593	05-APR-94	59.90	6000.00	5940.10	5862.00	QUARTERLY WATER LEVEL
PLF	70593	23-MAY-94	42.77	6000.00	5957.23	5862.00	
PLF	70593	13-JUL-94	47.84	6000.00	5952.16	5862.00	QUARTERLY WATER LEVEL
PLF	70593	30-AUG-94	40.12	6000.00	5959.88	5862.00	
PLF	70593	03-OCT-94	52.02	6000.00	5947.98	5862.00	QUARTERLY WATER LEVEL
PLF	70593	24-OCT-94	45.36	6000.00	5954.64	5862.00	
PLF	70693	04-JAN-94	19.96	5992.70	5972.74	5962.80	QUARTERLY WATER LEVEL
PLF	70693	04-MAR-94	17.83	5992.70	5974.87	5962.80	
PLF	70693	07-MAR-94	18.15	5992.70	5974.55	5962.80	

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
PLF	70693	05-APR-94	16.69	5992.70	5976.01	5962.80	QUARTERLY WATER LEVEL
PLF	70693	28-APR-94	13.38	5992.70	5979.32	5962.80	
PLF	70693	13-JUL-94	17.96	5992.70	5974.74	5962.80	QUARTERLY WATER LEVEL
PLF	70693	26-AUG-94	19.03	5992.70	5973.67	5962.80	
PLF	70693	03-OCT-94	20.28	5992.70	5972.42	5962.80	QUARTERLY WATER LEVEL
PLF	70693	28-OCT-94	20.73	5992.70	5971.97	5962.80	
PLF	7087	04-JAN-94	9.81	5968.38	5958.57	5950.45	QUARTERLY WATER LEVEL
PLF	7087	20-JAN-94	10.03	5968.38	5958.35	5950.45	
PLF	7087	02-FEB-94	14.10	5968.38	5954.28	5950.45	MONTHLY WATER LEVEL
PLF	7087	03-MAR-94	7.95	5968.38	5960.43	5950.45	MONTHLY WATER LEVEL
PLF	7087	07-APR-94	7.62	5968.38	5960.76	5950.45	
PLF	7087	04-APR-94	7.00	5968.38	5961.38	5950.45	QUARTERLY WATER LEVEL
PLF	7087	02-MAY-94	6.43	5968.38	5961.95	5950.45	MONTHLY WATER LEVEL
PLF	7087	06-JUN-94	8.90	5968.38	5959.48	5950.45	MONTHLY WATER LEVEL
PLF	7087	12-JUL-94	10.86	5968.38	5957.52	5950.45	QUARTERLY WATER LEVEL
PLF	7087	27-JUL-94	11.40	5968.38	5956.98	5950.45	
PLF	7087	01-AUG-94	16.68	5968.38	5951.70	5950.45	MONTHLY WATER LEVEL
PLF	7087	02-SEP-94	16.01	5968.38	5952.37	5950.45	MONTHLY WATER LEVEL
PLF	7087	03-OCT-94	15.61	5968.38	5952.77	5950.45	QUARTERLY WATER LEVEL
PLF	7087	17-OCT-94	15.44	5968.38	5952.94	5950.45	
PLF	7087	01-NOV-94	17.85	5968.38	5950.53	5950.45	MONTHLY WATER LEVEL
PLF	70893	04-JAN-94	53.96	5993.20	5939.24	5925.20	QUARTERLY WATER LEVEL
PLF	70893	16-MAR-94	41.40	5993.20	5951.80	5925.20	
PLF	70893	05-APR-94	59.85	5993.20	5933.35	5925.20	QUARTERLY WATER LEVEL
PLF	70893	28-APR-94	55.75	5993.20	5937.45	5925.20	
PLF	70893	13-JUL-94	49.31	5993.20	5943.89	5925.20	QUARTERLY WATER LEVEL
PLF	70893	29-AUG-94	41.76	5993.20	5951.44	5925.20	
PLF	70893	03-OCT-94	56.38	5993.20	5936.82	5925.20	QUARTERLY WATER LEVEL
PLF	70893	31-OCT-94	51.43	5993.20	5941.77	5925.20	
PLF	71193	04-JAN-94	14.92	5991.30	5976.38	5969.30	QUARTERLY WATER LEVEL
PLF	71193	14-MAR-94	14.29	5991.30	5977.01	5969.30	
PLF	71193	05-APR-94	13.88	5991.30	5977.42	5969.30	QUARTERLY WATER LEVEL
PLF	71193	21-APR-94	10.85	5991.30	5980.45	5969.30	
PLF	71193	13-JUL-94	12.64	5991.30	5978.66	5969.30	QUARTERLY WATER LEVEL
PLF	71193	21-AUG-94	13.48	5991.30	5977.82	5969.30	
PLF	71193	03-OCT-94	14.19	5991.30	5977.11	5969.30	QUARTERLY WATER LEVEL
PLF	71193	26-OCT-94	14.63	5991.30	5976.67	5969.30	
PLF	71493	04-JAN-94	22.41	5992.40	5969.99	5967.60	QUARTERLY WATER LEVEL
PLF	71493	14-MAR-94	22.72	5992.40	5969.68	5967.60	
PLF	71493	05-APR-94	22.28	5992.40	5970.12	5967.60	QUARTERLY WATER LEVEL
PLF	71493	21-APR-94	21.92	5992.40	5970.48	5967.60	
PLF	71493	13-JUL-94	22.14	5992.40	5970.26	5967.60	QUARTERLY WATER LEVEL

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
PLF	71493	21-AUG-94	22.21	5992.40	5970.19	5967.60	
PLF	71493	03-OCT-94	22.41	5992.40	5969.99	5967.60	QUARTERLY WATER LEVEL
PLF	71493	27-OCT-94	22.61	5992.40	5969.79	5967.60	
PLF	71693	14-JAN-94	28.20	5990.30	5962.10	5962.00	QUARTERLY WATER LEVEL
PLF	71693	17-MAR-94	28.12	5990.30	5962.18	5962.00	DRY DAY 2
PLF	71693	07-APR-94	29.14	5990.30	5961.16	5962.00	QUARTERLY WATER LEVEL
PLF	71693	09-JUN-94	25.93	5990.30	5964.37	5962.00	
PLF	71693	13-JUL-94	20.10	5990.30	5970.20	5962.00	QUARTERLY WATER LEVEL
PLF	71693	12-SEP-94	28.19	5990.30	5962.11	5962.00	
PLF	71693	10-OCT-94	29.28	5990.30	5961.02	5962.00	QUARTERLY WATER LEVEL
PLF	71693	26-OCT-94	28.99	5990.30	5961.31	5962.00	
PLF	7187	04-JAN-94	7.72	5965.49	5957.77	5950.38	QUARTERLY WATER LEVEL
PLF	7187	11-FEB-94	7.66	5965.49	5957.83	5950.38	
PLF	7187	05-APR-94	6.58	5965.49	5958.91	5950.38	QUARTERLY WATER LEVEL
PLF	7187	19-APR-94	5.96	5965.49	5959.53	5950.38	
PLF	7187	13-JUL-94	9.19	5965.49	5956.30	5950.38	QUARTERLY WATER LEVEL
PLF	7187	05-AUG-94	9.52	5965.49	5955.97	5950.38	
PLF	7187	03-OCT-94	9.20	5965.49	5956.29	5950.38	QUARTERLY WATER LEVEL
PLF	7187	12-OCT-94	9.03	5965.49	5956.46	5950.38	
PLF	71893	04-JAN-94	18.85	5989.70	5970.85	5962.00	QUARTERLY WATER LEVEL
PLF	71893	15-MAR-94	16.54	5989.70	5973.16	5962.00	
PLF	71893	05-APR-94	16.51	5989.70	5973.19	5962.00	QUARTERLY WATER LEVEL
PLF	71893	04-MAY-94	12.31	5989.70	5977.39	5962.00	
PLF	71893	13-JUL-94	18.75	5989.70	5970.95	5962.00	QUARTERLY WATER LEVEL
PLF	71893	30-AUG-94	18.62	5989.70	5971.08	5962.00	
PLF	71893	10-OCT-94	19.44	5989.70	5970.26	5962.00	QUARTERLY WATER LEVEL
PLF	71893	26-OCT-94	19.57	5989.70	5970.13	5962.00	
PLF	72093	04-JAN-94	22.20	5988.30	5966.10	5950.60	QUARTERLY WATER LEVEL
PLF	72093	10-MAR-94	22.55	5988.30	5965.75	5950.60	
PLF	72093	04-APR-94	22.52	5988.30	5965.78	5950.60	QUARTERLY WATER LEVEL
PLF	72093	05-MAY-94	22.55	5988.30	5965.75	5950.60	
PLF	72093	12-JUL-94	23.36	5988.30	5964.94	5950.60	QUARTERLY WATER LEVEL
PLF	72093	18-JUL-94	22.35	5988.30	5965.95	5950.60	
PLF	72093	10-OCT-94	30.71	6002.77	5972.06	5950.60	QUARTERLY WATER LEVEL
PLF	72093	10-NOV-94	30.73	6002.77	5972.04	5950.60	
PLF	72293	04-JAN-94	32.47	5976.10	5943.63	5941.10	QUARTERLY WATER LEVEL
PLF	72293	15-MAR-94	32.54	5976.10	5943.56	5941.10	
PLF	72293	04-APR-94	32.20	5976.10	5943.90	5941.10	QUARTERLY WATER LEVEL
PLF	72293	09-MAY-94	32.53	5976.10	5943.57	5941.10	
PLF	72293	12-JUL-94	32.44	5976.10	5943.66	5941.10	QUARTERLY WATER LEVEL
PLF	72293	19-JUL-94	32.51	5976.10	5943.59	5941.10	
PLF	72293	03-OCT-94	32.53	5976.10	5943.57	5941.10	QUARTERLY WATER LEVEL

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
PLF	72293	31-OCT-94	32.53	5976.10	5943.57	5941.10	
PLF	72393	04-JAN-94	21.43	5987.20	5965.77	5963.20	QUARTERLY WATER LEVEL
PLF	72393	16-MAR-94	21.74	5987.20	5965.46	5963.20	
PLF	72393	04-APR-94	21.75	5987.20	5965.45	5963.20	QUARTERLY WATER LEVEL
PLF	72393	09-MAY-94	21.76	5987.20	5965.44	5963.20	
PLF	72393	12-JUL-94	21.56	5987.20	5965.64	5963.20	QUARTERLY WATER LEVEL
PLF	72393	19-JUL-94	21.56	5987.20	5965.64	5963.20	
PLF	72393	10-OCT-94	30.22	6001.83	5971.61	5963.20	QUARTERLY WATER LEVEL
PLF	72393	28-OCT-94	30.08	6001.83	5971.75	5963.20	
PLF	72493	04-JAN-94	-1.00	5975.80	DRY	5945.80	QUARTERLY WATER LEVEL
PLF	72493	04-APR-94	-1.00	5975.80	DRY	5945.80	QUARTERLY WATER LEVEL/NOT DEVELOPED
PLF	72493	12-JUL-94	-1.00	5975.80	DRY	5945.80	QUARTERLY WATER LEVEL
PLF	72493	01-AUG-94	-1.00	5975.80	DRY	5945.80	MONTHLY WATER LEVEL
PLF	72493	02-SEP-94	-1.00	5975.80	DRY	5945.80	MONTHLY WATER LEVEL
PLF	72493	03-OCT-94	-1.00	5975.80	DRY	5945.80	QUARTERLY WATER LEVEL
PLF	72493	01-NOV-94	-1.00	5975.80	DRY	5945.80	MONTHLY WATER LEVEL
PLF	7287	04-JAN-94	5.96	5971.25	5965.29	5962.84	QUARTERLY WATER LEVEL
PLF	7287	28-FEB-94	5.22	5971.25	5966.03	5962.84	
PLF	7287	05-APR-94	4.84	5971.25	5966.41	5962.84	QUARTERLY WATER LEVEL
PLF	7287	18-APR-94	4.42	5971.25	5966.83	5962.84	
PLF	7287	11-JUL-94	7.64	5971.25	5963.61	5962.84	QUARTERLY WATER LEVEL
PLF	7287	15-AUG-94	7.59	5971.25	5963.66	5962.84	
PLF	7287	03-OCT-94	8.53	5971.25	5962.72	5962.84	QUARTERLY WATER LEVEL
PLF	7287	17-OCT-94	8.60	5971.25	5962.65	5962.84	
PLF	76792	04-JAN-94	8.58	5945.50	5936.92	5938.00	QUARTERLY WATER LEVEL/NOT DEVELOPED
PLF	76792	04-APR-94	6.23	5945.50	5939.27	5938.00	QUARTERLY WATER LEVEL
PLF	76792	11-JUL-94	9.62	5945.50	5935.88	5938.00	QUARTERLY WATER LEVEL
PLF	76792	06-SEP-94	6.35	5945.50	5939.15	5938.00	MONTHLY WATER LEVEL
PLF	76792	03-OCT-94	9.41	5945.50	5936.09	5938.00	QUARTERLY WATER LEVEL
PLF	76792	02-NOV-94	9.40	5945.50	5936.10	5938.00	MONTHLY WATER LEVEL
PLF	76992	04-JAN-94	12.52	5958.00	5945.48	5945.60	QUARTERLY WATER LEVEL/NOT DEVELOPED
PLF	76992	04-APR-94	12.88	5958.00	5945.12	5945.60	QUARTERLY WATER LEVEL
PLF	76992	09-MAY-94	9.29	5958.00	5948.71	5945.60	
PLF	76992	11-JUL-94	10.96	5958.00	5947.04	5945.60	QUARTERLY WATER LEVEL
PLF	76992	06-SEP-94	12.20	5958.00	5945.80	5945.60	
PLF	76992	10-OCT-94	14.28	5958.00	5943.72	5945.60	QUARTERLY WATER LEVEL
PLF	77392	11-JAN-94	-1.00	5965.50	DRY	5955.60	QUARTERLY WATER LEVEL
PLF	77392	11-APR-94	-1.00	5965.50	DRY	5955.60	QUARTERLY WATER LEVEL/NOT DEVELOPED
PLF	77392	11-JUL-94	-1.00	5965.50	DRY	5955.60	QUARTERLY WATER LEVEL
PLF	77392	06-SEP-94	-1.00	5965.50	DRY	5955.60	MONTHLY WATER LEVEL
PLF	77392	03-OCT-94	-1.00	5965.50	DRY	5955.60	QUARTERLY WATER LEVEL
PLF	B106089	04-JAN-94	23.19	5995.35	5972.16	5970.10	QUARTERLY WATER LEVEL

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
PLF	B106089	02-FEB-94	22.86	5995.35	5972.49	5970.10	MONTHLY WATER LEVEL
PLF	B106089	28-FEB-94	22.83	5995.35	5972.52	5970.10	
PLF	B106089	01-MAR-94	22.83	5995.35	5972.52	5970.10	MONTHLY WATER LEVEL
PLF	B106089	05-APR-94	24.46	5995.35	5970.89	5970.10	QUARTERLY WATER LEVEL
PLF	B106089	18-APR-94	21.61	5995.35	5973.74	5970.10	
PLF	B106089	02-MAY-94	20.59	5995.35	5974.76	5970.10	MONTHLY WATER LEVEL
PLF	B106089	06-JUN-94	22.24	5995.35	5973.11	5970.10	MONTHLY WATER LEVEL
PLF	B106089	13-JUL-94	22.30	5995.35	5973.05	5970.10	QUARTERLY WATER LEVEL
PLF	B106089	28-JUL-94	22.30	5995.35	5973.05	5970.10	
PLF	B106089	01-AUG-94	25.80	5995.35	5969.55	5970.10	MONTHLY WATER LEVEL
PLF	B106089	06-SEP-94	23.80	5995.35	5971.55	5970.10	MONTHLY WATER LEVEL
PLF	B106089	03-OCT-94	23.10	5995.35	5972.25	5970.10	QUARTERLY WATER LEVEL
PLF	B106089	17-OCT-94	22.90	5995.35	5972.45	5970.10	
PLF	B106089	02-NOV-94	25.41	5995.35	5969.94	5970.10	MONTHLY WATER LEVEL
PLF	B206289	04-JAN-94	24.46	5979.49	5955.03	5935.77	QUARTERLY WATER LEVEL
PLF	B206289	20-JAN-94	22.30	5979.49	5957.19	5935.77	
PLF	B206289	05-APR-94	22.49	5979.49	5957.00	5935.77	QUARTERLY WATER LEVEL
PLF	B206289	11-APR-94	21.73	5979.49	5957.76	5935.77	
PLF	B206289	11-JUL-94	21.77	5979.49	5957.72	5935.77	QUARTERLY WATER LEVEL
PLF	B206289	03-AUG-94	20.48	5979.49	5959.01	5935.77	
PLF	B206289	03-OCT-94	26.76	5979.49	5952.73	5935.77	QUARTERLY WATER LEVEL
PLF	B206289	25-OCT-94	24.02	5979.49	5955.47	5935.77	
PLF	B206489	04-JAN-94	6.44	5971.46	5965.02	5959.14	QUARTERLY WATER LEVEL
PLF	B206489	28-FEB-94	7.73	5971.46	5963.73	5959.14	
PLF	B206489	05-APR-94	5.09	5971.46	5966.37	5959.14	QUARTERLY WATER LEVEL
PLF	B206489	18-APR-94	4.53	5971.46	5966.93	5959.14	
PLF	B206489	11-JUL-94	7.76	5971.46	5963.70	5959.14	QUARTERLY WATER LEVEL
PLF	B206489	15-AUG-94	8.50	5971.46	5962.96	5959.14	
PLF	B206489	03-OCT-94	9.81	5971.46	5961.65	5959.14	QUARTERLY WATER LEVEL
PLF	B206489	12-OCT-94	9.63	5971.46	5961.83	5959.14	
PLF	B206589	04-JAN-94	8.67	5969.72	5961.05	5932.66	QUARTERLY WATER LEVEL
PLF	B206589	20-JAN-94	8.81	5969.72	5960.91	5932.66	
PLF	B206589	05-APR-94	7.82	5969.72	5961.90	5932.66	QUARTERLY WATER LEVEL
PLF	B206589	13-APR-94	7.43	5969.72	5962.29	5932.66	
PLF	B206589	11-JUL-94	7.70	5969.72	5962.02	5932.66	QUARTERLY WATER LEVEL
PLF	B206589	20-JUL-94	8.91	5969.72	5960.81	5932.66	
PLF	B206589	03-OCT-94	9.43	5969.72	5960.29	5932.66	QUARTERLY WATER LEVEL
PLF	B206589	17-OCT-94	9.57	5969.72	5960.15	5932.66	
PLF	B206689	04-JAN-94	18.80	5961.20	5942.40	5941.14	QUARTERLY WATER LEVEL
PLF	B206689	25-JAN-94	18.31	5961.20	5942.89	5941.14	
PLF	B206689	04-APR-94	18.32	5961.20	5942.88	5941.14	QUARTERLY WATER LEVEL
PLF	B206689	13-APR-94	17.68	5961.20	5943.52	5941.14	

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
PLF	B206689	11-JUL-94	12.26	5961.20	5948.94	5941.14	QUARTERLY WATER LEVEL
PLF	B206689	28-JUL-94	11.73	5961.20	5949.47	5941.14	
PLF	B206689	03-OCT-94	18.22	5961.20	5942.98	5941.14	QUARTERLY WATER LEVEL
PLF	B206689	17-OCT-94	17.86	5961.20	5943.34	5941.14	
PLF	B206789	04-JAN-94	13.67	5930.19	5916.52	5908.62	QUARTERLY WATER LEVEL
PLF	B206789	17-JAN-94	13.31	5930.19	5916.88	5908.62	
PLF	B206789	04-APR-94	13.41	5930.19	5916.78	5908.62	QUARTERLY WATER LEVEL
PLF	B206789	13-APR-94	12.94	5930.19	5917.25	5908.62	
PLF	B206789	12-JUL-94	16.43	5930.19	5913.76	5908.62	QUARTERLY WATER LEVEL
PLF	B206789	07-AUG-94	15.80	5930.19	5914.39	5908.62	
PLF	B206789	14-SEP-94	16.88	5930.19	5913.31	5908.62	
PLF	B206789	03-OCT-94	18.77	5930.19	5911.42	5908.62	QUARTERLY WATER LEVEL
PLF	B206789	12-OCT-94	17.82	5930.19	5912.37	5908.62	
PLF	B206889	04-JAN-94	18.71	5919.15	5900.44	5899.64	QUARTERLY WATER LEVEL
PLF	B206889	18-JAN-94	18.55	5919.15	5900.60	5899.64	
PLF	B206889	04-APR-94	18.86	5919.15	5900.29	5899.64	QUARTERLY WATER LEVEL
PLF	B206889	13-APR-94	18.73	5919.15	5900.42	5899.64	
PLF	B206889	11-JUL-94	18.62	5919.15	5900.53	5899.64	QUARTERLY WATER LEVEL
PLF	B206889	02-AUG-94	18.37	5919.15	5900.78	5899.64	
PLF	B206889	03-OCT-94	19.29	5919.15	5899.86	5899.64	QUARTERLY WATER LEVEL
PLF	B206889	12-OCT-94	19.18	5919.15	5899.97	5899.64	
PLF	B206989	04-JAN-94	21.97	5884.32	5862.35	5861.12	QUARTERLY WATER LEVEL
PLF	B206989	17-JAN-94	21.79	5884.32	5862.53	5861.12	
PLF	B206989	04-APR-94	22.75	5884.32	5861.57	5861.12	QUARTERLY WATER LEVEL
PLF	B206989	11-APR-94	22.71	5884.32	5861.61	5861.12	
PLF	B206989	11-JUL-94	22.00	5884.32	5862.32	5861.12	QUARTERLY WATER LEVEL
PLF	B206989	02-AUG-94	21.57	5884.32	5862.75	5861.12	
PLF	B206989	03-OCT-94	22.31	5884.32	5862.01	5861.12	QUARTERLY WATER LEVEL
PLF	B206989	12-OCT-94	22.08	5884.32	5862.24	5861.12	
PLF	B207089	04-JAN-94	24.39	5884.95	5860.56	5830.07	QUARTERLY WATER LEVEL
PLF	B207089	27-JAN-94	27.15	5884.95	5857.80	5830.07	
PLF	B207089	07-APR-94	24.73	5884.95	5860.22	5830.07	
PLF	B207089	04-APR-94	24.85	5884.95	5860.10	5830.07	QUARTERLY WATER LEVEL
PLF	B207089	11-JUL-94	24.62	5884.95	5860.33	5830.07	QUARTERLY WATER LEVEL
PLF	B207089	04-AUG-94	24.30	5884.95	5860.65	5830.07	
PLF	B207089	03-OCT-94	25.62	5884.95	5859.33	5830.07	QUARTERLY WATER LEVEL
PLF	B207089	12-OCT-94	25.28	5884.95	5859.67	5830.07	
PLF	B207289	04-JAN-94	-1.00	5950.49	DRY	5933.62	QUARTERLY WATER LEVEL
PLF	B207289	05-APR-94	-1.00	5950.49	DRY	5933.62	QUARTERLY WATER LEVEL
PLF	B207289	13-JUL-94	-1.00	5950.49	DRY	5933.62	QUARTERLY WATER LEVEL
PLF	B207289	10-OCT-94	-1.00	5950.49	DRY	5933.62	QUARTERLY WATER LEVEL
SEP	02691	07-JAN-94	8.97	5936.38	5927.41	5918.78	QUARTERLY WATER LEVEL

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
SEP	02691	21-FEB-94	9.28	5936.38	5927.10	5918.78	
SEP	02691	06-APR-94	8.31	5936.38	5928.07	5918.78	QUARTERLY WATER LEVEL
SEP	02691	18-MAY-94	6.96	5936.38	5929.42	5918.78	
SEP	02691	11-JUL-94	8.02	5936.38	5928.36	5918.78	QUARTERLY WATER LEVEL
SEP	02691	26-AUG-94	8.65	5936.38	5927.73	5918.78	
SEP	02691	07-OCT-94	9.13	5936.38	5927.25	5918.78	QUARTERLY WATER LEVEL
SEP	05093	10-JAN-94	10.44	5965.54	5955.10	5952.80	QUARTERLY WATER LEVEL
SEP	05093	01-FEB-94	10.64	5965.54	5954.90	5952.80	MONTHLY WATER LEVEL
SEP	05093	03-MAR-94	10.15	5965.54	5955.39	5952.80	MONTHLY WATER LEVEL
SEP	05093	14-MAR-94	9.33	5965.54	5956.21	5952.80	
SEP	05093	05-APR-94	9.01	5965.54	5956.53	5952.80	QUARTERLY WATER LEVEL
SEP	05093	21-APR-94	8.13	5965.54	5957.41	5952.80	
SEP	05093	02-MAY-94	7.16	5965.54	5958.38	5952.80	MONTHLY WATER LEVEL
SEP	05093	02-JUN-94	7.87	5965.54	5957.67	5952.80	MONTHLY WATER LEVEL
SEP	05093	01-JUL-94	8.46	5965.54	5957.08	5952.80	QUARTERLY WATER LEVEL
SEP	05093	26-JUL-94	9.34	5965.54	5956.20	5952.80	
SEP	05093	01-AUG-94	9.53	5965.54	5956.01	5952.80	MONTHLY WATER LEVEL
SEP	05093	01-SEP-94	10.09	5965.54	5955.45	5952.80	MONTHLY WATER LEVEL
SEP	05093	04-OCT-94	10.52	5965.54	5955.02	5952.80	QUARTERLY WATER LEVEL
SEP	05093	19-OCT-94	10.45	5965.54	5955.09	5952.80	
SEP	05093	24-OCT-94	10.50	5965.54	5955.04	5952.80	
SEP	05093	02-NOV-94	10.60	5965.54	5954.94	5952.80	MONTHLY WATER LEVEL
SEP	05193	10-JAN-94	11.35	5970.58	5959.23	5957.00	QUARTERLY WATER LEVEL
SEP	05193	01-FEB-94	11.70	5970.58	5958.88	5957.00	MONTHLY WATER LEVEL
SEP	05193	03-MAR-94	11.41	5970.58	5959.17	5957.00	MONTHLY WATER LEVEL
SEP	05193	14-MAR-94	10.66	5970.58	5959.92	5957.00	
SEP	05193	05-APR-94	10.28	5970.58	5960.30	5957.00	QUARTERLY WATER LEVEL
SEP	05193	21-APR-94	9.36	5970.58	5961.22	5957.00	
SEP	05193	02-MAY-94	8.64	5970.58	5961.94	5957.00	MONTHLY WATER LEVEL
SEP	05193	02-JUN-94	8.70	5970.58	5961.88	5957.00	MONTHLY WATER LEVEL
SEP	05193	01-JUL-94	9.49	5970.58	5961.09	5957.00	QUARTERLY WATER LEVEL
SEP	05193	15-JUL-94	10.32	5970.58	5960.26	5957.00	
SEP	05193	01-AUG-94	11.09	5970.58	5959.49	5957.00	MONTHLY WATER LEVEL
SEP	05193	01-SEP-94	12.02	5970.58	5958.56	5957.00	MONTHLY WATER LEVEL
SEP	05193	04-OCT-94	12.53	5970.58	5958.05	5957.00	QUARTERLY WATER LEVEL
SEP	05193	14-OCT-94	12.55	5970.58	5958.03	5957.00	
SEP	05193	02-NOV-94	12.67	5970.58	5957.91	5957.00	MONTHLY WATER LEVEL
SEP	05293	11-JAN-94	7.87	5983.11	5975.24	5973.00	QUARTERLY WATER LEVEL/NOT DEVELOPED
SEP	05293	28-MAR-94	7.54	5983.11	5975.57	5973.00	
SEP	05293	06-APR-94	7.34	5983.11	5975.77	5973.00	QUARTERLY WATER LEVEL
SEP	05293	02-JUN-94	7.85	5983.11	5975.26	5973.00	
SEP	05293	06-JUL-94	9.03	5983.11	5974.08	5973.00	QUARTERLY WATER LEVEL

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
SEP	05293	13-JUL-94	9.25	5983.11	5973.86	5973.00	
SEP	05293	05-OCT-94	12.57	5983.11	5970.54	5973.00	QUARTERLY WATER LEVEL/TECHNICALLY DRY
SEP	05393	10-JAN-94	20.09	5969.69	5949.60	5945.30	QUARTERLY WATER LEVEL/NOT DEVELOPED
SEP	05393	05-APR-94	22.67	5969.69	5947.02	5945.30	QUARTERLY WATER LEVEL
SEP	05393	01-JUL-94	19.70	5969.69	5949.99	5945.30	QUARTERLY WATER LEVEL
SEP	05393	01-AUG-94	17.94	5969.69	5951.75	5945.30	MONTHLY WATER LEVEL
SEP	05393	01-SEP-94	21.65	5969.69	5948.04	5945.30	MONTHLY WATER LEVEL
SEP	05393	04-OCT-94	19.97	5969.69	5949.72	5945.30	QUARTERLY WATER LEVEL
SEP	05393	02-NOV-94	18.48	5969.69	5951.21	5945.30	MONTHLY WATER LEVEL
SEP	1386	03-JAN-94	5.27	5842.59	5837.32	5830.97	QUARTERLY WATER LEVEL
SEP	1386	20-JAN-94	5.31	5842.59	5837.28	5830.97	
SEP	1386	03-FEB-94	5.25	5842.59	5837.34	5830.97	MONTHLY WATER LEVEL
SEP	1386	02-MAR-94	4.52	5842.59	5838.07	5830.97	MONTHLY WATER LEVEL
SEP	1386	06-APR-94	5.04	5842.59	5837.55	5830.97	QUARTERLY WATER LEVEL
SEP	1386	13-APR-94	4.06	5842.59	5838.53	5830.97	
SEP	1386	02-MAY-94	4.52	5842.59	5838.07	5830.97	MONTHLY WATER LEVEL
SEP	1386	06-JUN-94	5.77	5842.59	5836.82	5830.97	MONTHLY WATER LEVEL
SEP	1386	06-JUL-94	6.88	5842.59	5835.71	5830.97	QUARTERLY WATER LEVEL
SEP	1386	18-JUL-94	7.08	5842.59	5835.51	5830.97	
SEP	1386	01-AUG-94	10.78	5842.59	5831.81	5830.97	MONTHLY WATER LEVEL
SEP	1386	06-SEP-94	9.79	5842.59	5832.80	5830.97	MONTHLY WATER LEVEL
SEP	1386	06-OCT-94	8.24	5842.59	5834.35	5830.97	QUARTERLY WATER LEVEL
SEP	1386	02-NOV-94	5.88	5842.59	5836.71	5830.97	MONTHLY WATER LEVEL
SEP	1486	03-JAN-94	10.28	5846.71	5836.43	5789.35	QUARTERLY WATER LEVEL
SEP	1486	27-JAN-94	10.19	5846.71	5836.52	5789.35	
SEP	1486	06-APR-94	10.70	5846.71	5836.01	5789.35	QUARTERLY WATER LEVEL
SEP	1486	12-APR-94	10.71	5846.71	5836.00	5789.35	
SEP	1486	06-JUL-94	12.63	5846.71	5834.08	5789.35	QUARTERLY WATER LEVEL
SEP	1486	15-AUG-94	11.74	5846.71	5834.97	5789.35	
SEP	1486	06-OCT-94	11.54	5846.71	5835.17	5789.35	QUARTERLY WATER LEVEL
SEP	1486	10-OCT-94	11.48	5846.71	5835.23	5789.35	
SEP	1586	03-JAN-94	7.01	5850.63	5843.62	5833.99	QUARTERLY WATER LEVEL
SEP	1586	07-FEB-94	6.90	5850.63	5843.73	5833.99	
SEP	1586	06-APR-94	6.58	5850.63	5844.05	5833.99	QUARTERLY WATER LEVEL
SEP	1586	13-APR-94	5.63	5850.63	5845.00	5833.99	
SEP	1586	26-MAY-94	7.08	5850.63	5843.55	5833.99	
SEP	1586	06-JUL-94	7.77	5850.63	5842.86	5833.99	QUARTERLY WATER LEVEL
SEP	1586	29-JUL-94	8.01	5850.63	5842.62	5833.99	
SEP	1586	06-OCT-94	7.64	5850.63	5842.99	5833.99	QUARTERLY WATER LEVEL
SEP	1586	13-OCT-94	7.55	5850.63	5843.08	5833.99	
SEP	1686	03-JAN-94	5.86	5869.55	5863.69	5822.86	QUARTERLY WATER LEVEL
SEP	1686	26-JAN-94	5.80	5869.55	5863.75	5822.86	

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
SEP	1686	05-APR-94	6.12	5869.55	5863.43	5822.86	QUARTERLY WATER LEVEL
SEP	1686	11-APR-94	6.12	5869.55	5863.43	5822.86	
SEP	1686	07-JUL-94	7.34	5869.55	5862.21	5822.86	QUARTERLY WATER LEVEL
SEP	1686	21-JUL-94	7.45	5869.55	5862.10	5822.86	
SEP	1686	06-OCT-94	7.15	5869.55	5862.40	5822.86	QUARTERLY WATER LEVEL
SEP	1786	03-JAN-94	6.78	5869.57	5862.79	5854.45	QUARTERLY WATER LEVEL
SEP	1786	03-FEB-94	6.85	5869.57	5862.72	5854.45	MONTHLY WATER LEVEL
SEP	1786	07-FEB-94	6.84	5869.57	5862.73	5854.45	
SEP	1786	02-MAR-94	5.89	5869.57	5863.68	5854.45	MONTHLY WATER LEVEL
SEP	1786	05-APR-94	6.26	5869.57	5863.31	5854.45	QUARTERLY WATER LEVEL
SEP	1786	13-APR-94	5.24	5869.57	5864.33	5854.45	
SEP	1786	02-MAY-94	5.81	5869.57	5863.76	5854.45	MONTHLY WATER LEVEL
SEP	1786	26-MAY-94	6.70	5869.57	5862.87	5854.45	
SEP	1786	06-JUN-94	6.68	5869.57	5862.89	5854.45	MONTHLY WATER LEVEL
SEP	1786	11-JUL-94	7.07	5869.57	5862.50	5854.45	QUARTERLY WATER LEVEL
SEP	1786	12-JUL-94	7.07	5869.57	5862.50	5854.45	
SEP	1786	01-AUG-94	7.19	5869.57	5862.38	5854.45	MONTHLY WATER LEVEL
SEP	1786	05-AUG-94	7.16	5869.57	5862.41	5854.45	
SEP	1786	06-SEP-94	7.14	5869.57	5862.43	5854.45	MONTHLY WATER LEVEL
SEP	1786	06-OCT-94	7.01	5869.57	5862.56	5854.45	QUARTERLY WATER LEVEL
SEP	1786	21-OCT-94	6.89	5869.57	5862.68	5854.45	
SEP	1786	02-NOV-94	6.84	5869.57	5862.73	5854.45	MONTHLY WATER LEVEL
SEP	1886	03-JAN-94	-1.00	5887.97	DRY	5878.25	QUARTERLY WATER LEVEL
SEP	1886	03-FEB-94	-1.00	5887.97	DRY	5878.25	MONTHLY WATER LEVEL
SEP	1886	02-MAR-94	10.08	5887.97	5877.89	5878.25	MONTHLY WATER LEVEL
SEP	1886	05-APR-94	-1.00	5887.97	DRY	5878.25	QUARTERLY WATER LEVEL
SEP	1886	02-MAY-94	-1.00	5887.97	DRY	5878.25	MONTHLY WATER LEVEL
SEP	1886	06-JUN-94	-1.00	5887.97	DRY	5878.25	MONTHLY WATER LEVEL
SEP	1886	06-JUL-94	-1.00	5887.97	DRY	5878.25	QUARTERLY WATER LEVEL
SEP	1886	01-AUG-94	-1.00	5887.97	DRY	5878.25	MONTHLY WATER LEVEL
SEP	1886	06-SEP-94	-1.00	5887.97	DRY	5878.25	MONTHLY WATER LEVEL
SEP	1886	06-OCT-94	-1.00	5887.97	DRY	5878.25	QUARTERLY WATER LEVEL
SEP	1886	02-NOV-94	-1.00	5887.97	DRY	5878.25	MONTHLY WATER LEVEL
SEP	2187	06-JAN-94	9.30	5929.69	5920.39	5918.03	QUARTERLY WATER LEVEL
SEP	2187	03-FEB-94	8.39	5929.69	5921.30	5918.03	
SEP	2187	05-APR-94	8.16	5929.69	5921.53	5918.03	QUARTERLY WATER LEVEL
SEP	2187	03-MAY-94	7.03	5929.69	5922.66	5918.03	
SEP	2187	01-JUL-94	7.63	5929.69	5922.06	5918.03	QUARTERLY WATER LEVEL
SEP	2187	08-AUG-94	6.30	5929.69	5923.39	5918.03	
SEP	2187	04-OCT-94	8.82	5929.69	5920.87	5918.03	QUARTERLY WATER LEVEL
SEP	2187	26-OCT-94	8.57	5929.69	5921.12	5918.03	
SEP	2286	10-JAN-94	10.05	5979.55	5969.50	5967.57	QUARTERLY WATER LEVEL

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
SEP	2286	01-MAR-94	9.67	5979.55	5969.88	5967.57	
SEP	2286	05-APR-94	8.85	5979.55	5970.70	5967.57	QUARTERLY WATER LEVEL
SEP	2286	21-APR-94	7.97	5979.55	5971.58	5967.57	
SEP	2286	05-JUL-94	9.16	5979.55	5970.39	5967.57	QUARTERLY WATER LEVEL
SEP	2286	18-JUL-94	9.65	5979.55	5969.90	5967.57	
SEP	2286	04-OCT-94	10.71	5979.55	5968.84	5967.57	QUARTERLY WATER LEVEL
SEP	2286	19-OCT-94	10.81	5979.55	5968.74	5967.57	
SEP	2287	06-JAN-94	80.14	5932.80	5852.66	5842.72	QUARTERLY WATER LEVEL
SEP	2287	03-FEB-94	80.21	5932.80	5852.59	5842.72	
SEP	2287	05-APR-94	80.33	5932.80	5852.47	5842.72	QUARTERLY WATER LEVEL
SEP	2287	03-MAY-94	80.31	5932.80	5852.49	5842.72	
SEP	2287	01-JUL-94	80.39	5932.80	5852.41	5842.72	QUARTERLY WATER LEVEL
SEP	2287	08-AUG-94	80.52	5932.80	5852.28	5842.72	
SEP	2287	04-OCT-94	80.56	5932.80	5852.24	5842.72	QUARTERLY WATER LEVEL
SEP	2287	31-OCT-94	80.47	5932.80	5852.33	5842.72	
SEP	2386	10-JAN-94	85.01	5982.46	5897.45	5865.21	QUARTERLY WATER LEVEL
SEP	2386	01-MAR-94	70.25	5982.46	5912.21	5865.21	
SEP	2386	05-APR-94	100.56	5982.46	5881.90	5865.21	QUARTERLY WATER LEVEL
SEP	2386	25-APR-94	92.26	5982.46	5890.20	5865.21	
SEP	2386	05-JUL-94	86.28	5982.46	5896.18	5865.21	QUARTERLY WATER LEVEL
SEP	2386	18-JUL-94	81.90	5982.46	5900.56	5865.21	
SEP	2386	04-OCT-94	84.30	5982.46	5898.16	5865.21	QUARTERLY WATER LEVEL
SEP	2386	25-OCT-94	77.61	5982.46	5904.85	5865.21	
SEP	2486	10-JAN-94	-1.00	5983.56	DRY	5975.00	QUARTERLY WATER LEVEL
SEP	2486	01-FEB-94	8.93	5983.56	5974.63	5975.00	MONTHLY WATER LEVEL
SEP	2486	03-MAR-94	7.00	5983.56	5976.56	5975.00	MONTHLY WATER LEVEL
SEP	2486	07-APR-94	7.74	5983.56	5975.82	5975.00	
SEP	2486	05-APR-94	8.04	5983.56	5975.52	5975.00	QUARTERLY WATER LEVEL
SEP	2486	02-MAY-94	6.96	5983.56	5976.60	5975.00	MONTHLY WATER LEVEL
SEP	2486	02-JUN-94	8.82	5983.56	5974.74	5975.00	MONTHLY WATER LEVEL
SEP	2486	05-JUL-94	-1.00	5983.56	DRY	5975.00	QUARTERLY WATER LEVEL
SEP	2486	01-AUG-94	8.93	5983.56	5974.63	5975.00	MONTHLY WATER LEVEL
SEP	2486	01-SEP-94	-1.00	5983.56	DRY	5975.00	MONTHLY WATER LEVEL
SEP	2486	04-OCT-94	-1.00	5983.56	DRY	5975.00	QUARTERLY WATER LEVEL
SEP	2486	02-NOV-94	9.06	5983.56	5974.50	5975.00	MONTHLY WATER LEVEL
SEP	2586	10-JAN-94	27.87	5977.14	5949.27	5893.24	QUARTERLY WATER LEVEL
SEP	2586	31-JAN-94	24.80	5977.14	5952.34	5893.24	
SEP	2586	14-APR-94	29.47	5977.14	5947.67	5893.24	
SEP	2586	06-APR-94	31.72	5977.14	5945.42	5893.24	QUARTERLY WATER LEVEL
SEP	2586	05-JUL-94	27.66	5977.14	5949.48	5893.24	QUARTERLY WATER LEVEL
SEP	2586	20-JUL-94	25.40	5977.14	5951.74	5893.24	
SEP	2586	04-OCT-94	29.26	5977.14	5947.88	5893.24	QUARTERLY WATER LEVEL

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
SEP	2586	06-OCT-94	28.75	5977.14	5948.39	5893.24	
SEP	2686	10-JAN-94	12.04	5977.17	5965.13	5964.42	QUARTERLY WATER LEVEL
SEP	2686	13-JAN-94	12.07	5977.17	5965.10	5964.42	
SEP	2686	01-FEB-94	12.25	5977.17	5964.92	5964.42	MONTHLY WATER LEVEL
SEP	2686	03-MAR-94	12.02	5977.17	5965.15	5964.42	MONTHLY WATER LEVEL
SEP	2686	07-APR-94	11.23	5977.17	5965.94	5964.42	
SEP	2686	06-APR-94	11.27	5977.17	5965.90	5964.42	QUARTERLY WATER LEVEL
SEP	2686	02-MAY-94	10.61	5977.17	5966.56	5964.42	MONTHLY WATER LEVEL
SEP	2686	02-JUN-94	11.11	5977.17	5966.06	5964.42	MONTHLY WATER LEVEL
SEP	2686	05-JUL-94	11.50	5977.17	5965.67	5964.42	QUARTERLY WATER LEVEL
SEP	2686	20-JUL-94	11.74	5977.17	5965.43	5964.42	
SEP	2686	01-AUG-94	11.91	5977.17	5965.26	5964.42	MONTHLY WATER LEVEL
SEP	2686	01-SEP-94	12.16	5977.17	5965.01	5964.42	MONTHLY WATER LEVEL
SEP	2686	04-OCT-94	12.65	5977.17	5964.52	5964.42	QUARTERLY WATER LEVEL
SEP	2686	06-OCT-94	12.62	5977.17	5964.55	5964.42	
SEP	2686	02-NOV-94	12.94	5977.17	5964.23	5964.42	MONTHLY WATER LEVEL
SEP	2786	10-JAN-94	76.85	5963.88	5887.03	5829.89	QUARTERLY WATER LEVEL
SEP	2786	01-MAR-94	63.21	5963.88	5900.67	5829.89	
SEP	2786	05-APR-94	100.22	5963.88	5863.66	5829.89	QUARTERLY WATER LEVEL
SEP	2786	21-APR-94	89.46	5963.88	5874.42	5829.89	
SEP	2786	01-JUL-94	79.00	5963.88	5884.88	5829.89	QUARTERLY WATER LEVEL
SEP	2786	18-JUL-94	72.88	5963.88	5891.00	5829.89	
SEP	2786	04-OCT-94	76.93	5963.88	5886.95	5829.89	QUARTERLY WATER LEVEL
SEP	2786	24-OCT-94	70.35	5963.88	5893.53	5829.89	
SEP	2986	06-JAN-94	10.45	5960.68	5950.23	5950.81	QUARTERLY WATER LEVEL/<.3FT NOT SAMPLED
SEP	2986	05-APR-94	10.46	5960.68	5950.22	5950.81	QUARTERLY WATER LEVEL
SEP	2986	01-JUL-94	-1.00	5960.68	DRY	5950.81	QUARTERLY WATER LEVEL
SEP	2986	04-OCT-94	10.41	5960.68	5950.27	5950.81	QUARTERLY WATER LEVEL/TECHNICALLY DRY
SEP	3086	10-JAN-94	7.25	5958.39	5951.14	5942.49	QUARTERLY WATER LEVEL
SEP	3086	02-FEB-94	7.55	5958.39	5950.84	5942.49	
SEP	3086	21-FEB-94	6.58	5958.39	5951.81	5942.49	
SEP	3086	07-APR-94	6.04	5958.39	5952.35	5942.49	
SEP	3086	04-APR-94	5.99	5958.39	5952.40	5942.49	QUARTERLY WATER LEVEL
SEP	3086	01-JUL-94	7.34	5958.39	5951.05	5942.49	QUARTERLY WATER LEVEL
SEP	3086	20-JUL-94	7.78	5958.39	5950.61	5942.49	
SEP	3086	04-OCT-94	8.17	5958.39	5950.22	5942.49	QUARTERLY WATER LEVEL
SEP	3086	06-OCT-94	7.85	5958.39	5950.54	5942.49	
SEP	3186	10-JAN-94	-1.00	5967.05	DRY	5947.66	QUARTERLY WATER LEVEL
SEP	3186	04-APR-94	-1.00	5967.05	DRY	5947.66	QUARTERLY WATER LEVEL
SEP	3186	01-JUL-94	-1.00	5967.05	DRY	5947.66	QUARTERLY WATER LEVEL
SEP	3186	04-OCT-94	-1.00	5967.05	DRY	5947.66	QUARTERLY WATER LEVEL
SEP	3286	10-JAN-94	54.25	5967.92	5913.67	5840.58	QUARTERLY WATER LEVEL

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
SEP	3286	02-FEB-94	53.72	5967.92	5914.20	5840.58	
SEP	3286	04-APR-94	54.47	5967.92	5913.45	5840.58	QUARTERLY WATER LEVEL
SEP	3286	19-APR-94	53.97	5967.92	5913.95	5840.58	
SEP	3286	01-JUL-94	54.22	5967.92	5913.70	5840.58	QUARTERLY WATER LEVEL
SEP	3286	04-AUG-94	53.66	5967.92	5914.26	5840.58	
SEP	3286	04-OCT-94	54.77	5967.92	5913.15	5840.58	QUARTERLY WATER LEVEL
SEP	3286	12-OCT-94	54.42	5967.92	5913.50	5840.58	
SEP	3386	10-JAN-94	-1.00	5952.42	DRY	5944.06	QUARTERLY WATER LEVEL
SEP	3386	05-APR-94	8.70	5952.42	5943.72	5944.06	QUARTERLY WATER LEVEL/<.3FT NOT SAMPLED
SEP	3386	05-JUL-94	-1.00	5952.42	DRY	5944.06	QUARTERLY WATER LEVEL
SEP	3386	04-OCT-94	-1.00	5952.42	DRY	5944.06	QUARTERLY WATER LEVEL
SEP	3486	07-JAN-94	21.65	5913.95	5892.30	5855.75	QUARTERLY WATER LEVEL
SEP	3486	10-MAR-94	21.36	5913.95	5892.59	5855.75	
SEP	3486	06-APR-94	21.34	5913.95	5892.61	5855.75	QUARTERLY WATER LEVEL
SEP	3486	23-MAY-94	21.25	5913.95	5892.70	5855.75	
SEP	3486	11-JUL-94	21.64	5913.95	5892.31	5855.75	QUARTERLY WATER LEVEL
SEP	3486	11-AUG-94	21.74	5913.95	5892.21	5855.75	
SEP	3486	07-OCT-94	21.94	5913.95	5892.01	5855.75	QUARTERLY WATER LEVEL
SEP	3586	07-JAN-94	9.56	5912.76	5903.20	5899.15	QUARTERLY WATER LEVEL
SEP	3586	03-FEB-94	9.69	5912.76	5903.07	5899.15	MONTHLY WATER LEVEL
SEP	3586	23-FEB-94	9.35	5912.76	5903.41	5899.15	
SEP	3586	10-MAR-94	8.51	5912.76	5904.25	5899.15	
SEP	3586	02-MAR-94	9.08	5912.76	5903.68	5899.15	MONTHLY WATER LEVEL
SEP	3586	06-APR-94	7.93	5912.76	5904.83	5899.15	QUARTERLY WATER LEVEL
SEP	3586	02-MAY-94	6.54	5912.76	5906.22	5899.15	MONTHLY WATER LEVEL
SEP	3586	18-MAY-94	7.35	5912.76	5905.41	5899.15	
SEP	3586	06-JUN-94	7.95	5912.76	5904.81	5899.15	MONTHLY WATER LEVEL
SEP	3586	11-JUL-94	7.77	5912.76	5904.99	5899.15	QUARTERLY WATER LEVEL
SEP	3586	01-AUG-94	8.91	5912.76	5903.85	5899.15	MONTHLY WATER LEVEL
SEP	3586	26-AUG-94	8.79	5912.76	5903.97	5899.15	
SEP	3586	07-SEP-94	8.85	5912.76	5903.91	5899.15	MONTHLY WATER LEVEL
SEP	3586	07-OCT-94	8.90	5912.76	5903.86	5899.15	QUARTERLY WATER LEVEL
SEP	3586	02-NOV-94	8.79	5912.76	5903.97	5899.15	MONTHLY WATER LEVEL
SEP	3686	03-JAN-94	-1.00	5885.22	DRY	5877.20	QUARTERLY WATER LEVEL
SEP	3686	04-FEB-94	-1.00	5885.22	DRY	5877.20	MONTHLY WATER LEVEL
SEP	3686	03-MAR-94	6.02	5885.22	5879.20	5877.20	MONTHLY WATER LEVEL
SEP	3686	04-APR-94	6.16	5885.22	5879.06	5877.20	QUARTERLY WATER LEVEL
SEP	3686	02-MAY-94	5.85	5885.22	5879.37	5877.20	MONTHLY WATER LEVEL
SEP	3686	19-MAY-94	6.37	5885.22	5878.85	5877.20	
SEP	3686	06-JUN-94	-1.00	5885.22	DRY	5877.20	MONTHLY WATER LEVEL
SEP	3686	22-JUN-94	8.25	5885.22	5876.97	5877.20	
SEP	3686	08-JUL-94	-1.00	5885.22	DRY	5877.20	QUARTERLY WATER LEVEL

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
SEP	3686	01-AUG-94	-1.00	5885.22	DRY	5877.20	MONTHLY WATER LEVEL
SEP	3686	06-SEP-94	-1.00	5885.22	DRY	5877.20	MONTHLY WATER LEVEL
SEP	3686	07-OCT-94	-1.00	5885.22	DRY	5877.20	QUARTERLY WATER LEVEL
SEP	3686	02-NOV-94	-1.00	5885.22	DRY	5877.20	MONTHLY WATER LEVEL
SEP	3887	10-JAN-94	-1.00	5973.90	DRY	5962.88	QUARTERLY WATER LEVEL
SEP	3887	05-APR-94	10.12	5973.90	5963.78	5962.88	QUARTERLY WATER LEVEL
SEP	3887	11-APR-94	10.00	5973.90	5963.90	5962.88	
SEP	3887	05-JUL-94	10.26	5973.90	5963.64	5962.88	QUARTERLY WATER LEVEL
SEP	3887	21-JUL-94	11.07	5973.90	5962.83	5962.88	
SEP	3887	04-OCT-94	-1.00	5973.90	DRY	5962.88	QUARTERLY WATER LEVEL
SEP	3987	10-JAN-94	88.79	5948.42	5859.63	5829.81	QUARTERLY WATER LEVEL
SEP	3987	01-FEB-94	83.04	5948.42	5865.38	5829.81	
SEP	3987	05-APR-94	93.59	5948.42	5854.83	5829.81	QUARTERLY WATER LEVEL
SEP	3987	14-APR-94	90.65	5948.42	5857.77	5829.81	
SEP	3987	01-JUL-94	88.78	5948.42	5859.64	5829.81	QUARTERLY WATER LEVEL
SEP	3987	08-AUG-94	79.58	5948.42	5868.84	5829.81	
SEP	3987	04-OCT-94	95.32	5948.42	5853.10	5829.81	QUARTERLY WATER LEVEL
SEP	3987	11-OCT-94	93.02	5948.42	5855.40	5829.81	
SEP	5687	10-JAN-94	8.47	5979.77	5971.30	5968.72	QUARTERLY WATER LEVEL
SEP	5687	01-FEB-94	9.80	5979.77	5969.97	5968.72	MONTHLY WATER LEVEL
SEP	5687	01-MAR-94	9.21	5979.77	5970.56	5968.72	
SEP	5687	05-APR-94	8.35	5979.77	5971.42	5968.72	QUARTERLY WATER LEVEL
SEP	5687	21-APR-94	7.57	5979.77	5972.20	5968.72	
SEP	5687	02-MAY-94	8.15	5979.77	5971.62	5968.72	MONTHLY WATER LEVEL
SEP	5687	02-JUN-94	7.31	5979.77	5972.46	5968.72	MONTHLY WATER LEVEL
SEP	5687	05-JUL-94	7.89	5979.77	5971.88	5968.72	QUARTERLY WATER LEVEL
SEP	5687	18-JUL-94	8.29	5979.77	5971.48	5968.72	
SEP	5687	01-AUG-94	9.28	5979.77	5970.49	5968.72	MONTHLY WATER LEVEL
SEP	5687	01-SEP-94	8.71	5979.77	5971.06	5968.72	MONTHLY WATER LEVEL
SEP	5687	04-OCT-94	9.38	5979.77	5970.39	5968.72	QUARTERLY WATER LEVEL
SEP	5687	24-OCT-94	9.65	5979.77	5970.12	5968.72	
SEP	5687	02-NOV-94	10.25	5979.77	5969.52	5968.72	MONTHLY WATER LEVEL
SEP	75892	11-JAN-94	-1.00	5959.20	DRY	5948.90	QUARTERLY WATER LEVEL
SEP	75892	05-APR-94	12.28	5959.20	5946.92	5948.90	QUARTERLY WATER LEVEL/NOT DEVELOPED
SEP	75892	13-JUL-94	-1.00	5959.20	DRY	5948.90	QUARTERLY WATER LEVEL
SEP	75892	06-SEP-94	-1.00	5959.20	DRY	5948.90	MONTHLY WATER LEVEL
SEP	75892	07-OCT-94	12.27	5959.20	5946.93	5948.90	QUARTERLY WATER LEVEL
SEP	75992	11-JAN-94	8.06	5899.10	5891.04	5887.10	QUARTERLY WATER LEVEL
SEP	75992	09-MAR-94	5.50	5899.10	5893.60	5887.10	
SEP	75992	04-APR-94	6.56	5899.10	5892.54	5887.10	QUARTERLY WATER LEVEL
SEP	75992	20-APR-94	6.77	5899.10	5892.33	5887.10	
SEP	75992	08-JUL-94	7.47	5899.10	5891.63	5887.10	QUARTERLY WATER LEVEL

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
SEP	75992	17-AUG-94	8.10	5899.10	5891.00	5887.10	
SEP	75992	14-SEP-94	11.14	5899.10	5887.96	5887.10	
SEP	75992	07-OCT-94	13.16	5899.10	5885.94	5887.10	QUARTERLY WATER LEVEL
SEP	75992	19-OCT-94	12.94	5899.10	5886.16	5887.10	
SEP	76192	07-JAN-94	-1.00	5963.00	DRY	5954.00	QUARTERLY WATER LEVEL
SEP	76192	06-APR-94	-1.00	5963.00	DRY	5954.00	QUARTERLY WATER LEVEL
SEP	76192	11-JUL-94	-1.00	5963.00	DRY	5954.00	QUARTERLY WATER LEVEL
SEP	76192	07-SEP-94	-1.00	5963.00	DRY	5954.00	MONTHLY WATER LEVEL
SEP	76192	05-OCT-94	-1.00	5963.00	DRY	5954.00	QUARTERLY WATER LEVEL
SEP	76292	11-JAN-94	19.76	5959.30	5939.54	5937.80	QUARTERLY WATER LEVEL
SEP	76292	07-FEB-94	20.05	5959.30	5939.25	5937.80	
SEP	76292	05-APR-94	17.80	5959.30	5941.50	5937.80	QUARTERLY WATER LEVEL
SEP	76292	28-APR-94	13.88	5959.30	5945.42	5937.80	
SEP	76292	01-JUL-94	15.91	5959.30	5943.39	5937.80	QUARTERLY WATER LEVEL
SEP	76292	22-AUG-94	17.43	5959.30	5941.87	5937.80	
SEP	76292	04-OCT-94	18.98	5959.30	5940.32	5937.80	QUARTERLY WATER LEVEL
SEP	76292	24-OCT-94	19.34	5959.30	5939.96	5937.80	
SEP	B208089	03-JAN-94	13.92	5937.07	5923.15	5922.50	QUARTERLY WATER LEVEL
SEP	B208089	17-JAN-94	14.02	5937.07	5923.05	5922.50	
SEP	B208089	03-FEB-94	14.46	5937.07	5922.61	5922.50	MONTHLY WATER LEVEL
SEP	B208089	02-MAR-94	14.32	5937.07	5922.75	5922.50	MONTHLY WATER LEVEL
SEP	B208089	05-APR-94	13.87	5937.07	5923.20	5922.50	QUARTERLY WATER LEVEL
SEP	B208089	11-APR-94	13.81	5937.07	5923.26	5922.50	
SEP	B208089	02-MAY-94	11.33	5937.07	5925.74	5922.50	MONTHLY WATER LEVEL
SEP	B208089	06-JUN-94	12.83	5937.07	5924.24	5922.50	MONTHLY WATER LEVEL
SEP	B208089	06-JUL-94	13.11	5937.07	5923.96	5922.50	QUARTERLY WATER LEVEL
SEP	B208089	26-JUL-94	13.26	5937.07	5923.81	5922.50	
SEP	B208089	01-AUG-94	14.03	5937.07	5923.04	5922.50	MONTHLY WATER LEVEL
SEP	B208089	06-SEP-94	13.49	5937.07	5923.58	5922.50	MONTHLY WATER LEVEL
SEP	B208089	06-OCT-94	13.65	5937.07	5923.42	5922.50	QUARTERLY WATER LEVEL
SEP	B208089	02-NOV-94	13.83	5937.07	5923.24	5922.50	MONTHLY WATER LEVEL
SEP	B208189	03-JAN-94	23.75	5937.46	5913.71	5909.06	QUARTERLY WATER LEVEL
SEP	B208189	19-JAN-94	22.82	5937.46	5914.64	5909.06	
SEP	B208189	05-APR-94	23.52	5937.46	5913.94	5909.06	QUARTERLY WATER LEVEL
SEP	B208189	11-APR-94	23.19	5937.46	5914.27	5909.06	
SEP	B208189	06-JUL-94	14.38	5937.46	5923.08	5909.06	QUARTERLY WATER LEVEL
SEP	B208189	28-JUL-94	14.38	5937.46	5923.08	5909.06	
SEP	B208189	06-OCT-94	23.57	5937.46	5913.89	5909.06	QUARTERLY WATER LEVEL
SEP	B208289	03-JAN-94	17.62	5852.95	5835.33	5835.28	QUARTERLY WATER LEVEL
SEP	B208289	20-JAN-94	17.59	5852.95	5835.36	5835.28	
SEP	B208289	05-APR-94	17.79	5852.95	5835.16	5835.28	QUARTERLY WATER LEVEL
SEP	B208289	13-APR-94	17.78	5852.95	5835.17	5835.28	DRY DAY 2

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
SEP	B208289	08-JUL-94	-1.00	5852.95	DRY	5835.28	QUARTERLY WATER LEVEL
SEP	B208289	06-OCT-94	17.65	5852.95	5835.30	5835.28	QUARTERLY WATER LEVEL
SEP	B208289	10-OCT-94	17.63	5852.95	5835.32	5835.28	
SEP	B208389	03-JAN-94	10.35	5878.66	5868.31	5869.00	QUARTERLY WATER LEVEL
SEP	B208389	05-APR-94	10.40	5878.66	5868.26	5869.00	QUARTERLY WATER LEVEL
SEP	B208389	08-JUL-94	11.39	5878.66	5867.27	5869.00	QUARTERLY WATER LEVEL
SEP	B208389	06-OCT-94	10.48	5878.66	5868.18	5869.00	QUARTERLY WATER LEVEL
SEP	B208489	03-JAN-94	-1.00	5878.34	DRY	5847.08	QUARTERLY WATER LEVEL/NOT SAMPLED
SEP	B208489	05-APR-94	-1.00	5878.34	DRY	5847.08	QUARTERLY WATER LEVEL
SEP	B208489	07-JUL-94	-1.00	5878.34	DRY	5847.08	QUARTERLY WATER LEVEL
SEP	B208489	06-OCT-94	-1.00	5878.34	DRY	5847.08	QUARTERLY WATER LEVEL
SEP	B208589	03-JAN-94	4.70	5858.35	5853.65	5852.51	QUARTERLY WATER LEVEL
SEP	B208589	06-APR-94	3.99	5858.35	5854.36	5852.51	QUARTERLY WATER LEVEL
SEP	B208589	07-JUL-94	5.88	5858.35	5852.47	5852.51	QUARTERLY WATER LEVEL
SEP	B208589	06-OCT-94	5.95	5858.35	5852.40	5852.51	QUARTERLY WATER LEVEL
SEP	B208689	03-JAN-94	16.70	5869.60	5852.90	5845.80	QUARTERLY WATER LEVEL
SEP	B208689	20-JAN-94	15.68	5869.60	5853.92	5845.80	
SEP	B208689	07-APR-94	18.77	5869.60	5850.83	5845.80	
SEP	B208689	05-APR-94	18.94	5869.60	5850.66	5845.80	QUARTERLY WATER LEVEL
SEP	B208689	07-JUL-94	21.36	5869.60	5848.24	5845.80	QUARTERLY WATER LEVEL
SEP	B208689	14-JUL-94	20.58	5869.60	5849.02	5845.80	
SEP	B208689	06-OCT-94	15.03	5869.60	5854.57	5845.80	QUARTERLY WATER LEVEL
SEP	B208689	11-OCT-94	14.64	5869.60	5854.96	5845.80	
SEP	B208789	03-JAN-94	9.10	5909.03	5899.93	5896.17	QUARTERLY WATER LEVEL
SEP	B208789	03-FEB-94	9.30	5909.03	5899.73	5896.17	MONTHLY WATER LEVEL
SEP	B208789	02-MAR-94	7.78	5909.03	5901.25	5896.17	MONTHLY WATER LEVEL
SEP	B208789	11-APR-94	3.75	5909.03	5905.28	5896.17	QUARTERLY WATER LEVEL
SEP	B208789	02-MAY-94	3.24	5909.03	5905.79	5896.17	MONTHLY WATER LEVEL
SEP	B208789	06-JUN-94	5.25	5909.03	5903.78	5896.17	MONTHLY WATER LEVEL
SEP	B208789	07-JUL-94	6.42	5909.03	5902.61	5896.17	QUARTERLY WATER LEVEL
SEP	B208789	01-AUG-94	7.01	5909.03	5902.02	5896.17	MONTHLY WATER LEVEL
SEP	B208789	06-SEP-94	7.72	5909.03	5901.31	5896.17	MONTHLY WATER LEVEL
SEP	B208789	07-OCT-94	8.27	5909.03	5900.76	5896.17	QUARTERLY WATER LEVEL
SEP	B208789	02-NOV-94	8.63	5909.03	5900.40	5896.17	MONTHLY WATER LEVEL
SEP	B210389	03-JAN-94	18.54	5875.32	5856.78	5850.13	QUARTERLY WATER LEVEL
SEP	B210389	05-APR-94	17.38	5875.32	5857.94	5850.13	QUARTERLY WATER LEVEL
SEP	B210389	07-JUL-94	16.42	5875.32	5858.90	5850.13	QUARTERLY WATER LEVEL
SEP	B210389	11-OCT-94	14.90	5875.32	5860.42	5850.13	QUARTERLY WATER LEVEL
SEP	B210489	03-JAN-94	4.94	5858.71	5853.77	5848.99	QUARTERLY WATER LEVEL
SEP	B210489	21-JAN-94	5.01	5858.71	5853.70	5848.99	
SEP	B210489	03-FEB-94	4.80	5858.71	5853.91	5848.99	MONTHLY WATER LEVEL
SEP	B210489	02-MAR-94	2.59	5858.71	5856.12	5848.99	MONTHLY WATER LEVEL

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
SEP	B210489	12-APR-94	3.35	5858.71	5855.36	5848.99	
SEP	B210489	06-APR-94	4.12	5858.71	5854.59	5848.99	QUARTERLY WATER LEVEL
SEP	B210489	02-MAY-94	3.44	5858.71	5855.27	5848.99	MONTHLY WATER LEVEL
SEP	B210489	03-JUN-94	5.43	5858.71	5853.28	5848.99	MONTHLY WATER LEVEL
SEP	B210489	07-JUL-94	6.58	5858.71	5852.13	5848.99	QUARTERLY WATER LEVEL
SEP	B210489	01-AUG-94	3.89	5858.71	5854.82	5848.99	MONTHLY WATER LEVEL
SEP	B210489	10-AUG-94	7.02	5858.71	5851.69	5848.99	
SEP	B210489	06-SEP-94	6.48	5858.71	5852.23	5848.99	MONTHLY WATER LEVEL
SEP	B210489	06-OCT-94	6.08	5858.71	5852.63	5848.99	QUARTERLY WATER LEVEL
SEP	B210489	17-OCT-94	5.92	5858.71	5852.79	5848.99	
SEP	B210489	02-NOV-94	5.55	5858.71	5853.16	5848.99	MONTHLY WATER LEVEL
SEP	P207389	11-JAN-94	7.06	5982.77	5975.71	5965.84	QUARTERLY WATER LEVEL
SEP	P207389	03-FEB-94	6.79	5982.77	5975.98	5965.84	
SEP	P207389	14-APR-94	6.31	5982.77	5976.46	5965.84	
SEP	P207389	06-APR-94	6.62	5982.77	5976.15	5965.84	QUARTERLY WATER LEVEL
SEP	P207389	06-JUL-94	8.19	5982.77	5974.58	5965.84	QUARTERLY WATER LEVEL
SEP	P207389	14-JUL-94	8.54	5982.77	5974.23	5965.84	
SEP	P207389	05-OCT-94	8.02	5982.77	5974.75	5965.84	QUARTERLY WATER LEVEL
SEP	P207389	19-OCT-94	7.86	5982.77	5974.91	5965.84	
SEP	P207589	10-JAN-94	25.58	5975.96	5950.38	5950.20	QUARTERLY WATER LEVEL
SEP	P207589	25-JAN-94	25.45	5975.96	5950.51	5950.20	
SEP	P207589	07-APR-94	25.87	5975.96	5950.09	5950.20	
SEP	P207589	06-APR-94	25.92	5975.96	5950.04	5950.20	QUARTERLY WATER LEVEL
SEP	P207589	05-JUL-94	25.58	5975.96	5950.38	5950.20	QUARTERLY WATER LEVEL
SEP	P207589	04-AUG-94	25.23	5975.96	5950.73	5950.20	
SEP	P207589	04-OCT-94	25.91	5975.96	5950.05	5950.20	QUARTERLY WATER LEVEL
SEP	P207589	13-OCT-94	25.77	5975.96	5950.19	5950.20	
SEP	P207689	06-JAN-94	8.09	5967.88	5959.79	5953.22	QUARTERLY WATER LEVEL
SEP	P207689	03-FEB-94	7.88	5967.88	5960.00	5953.22	
SEP	P207689	05-APR-94	7.79	5967.88	5960.09	5953.22	QUARTERLY WATER LEVEL
SEP	P207689	20-APR-94	7.51	5967.88	5960.37	5953.22	
SEP	P207689	01-JUL-94	8.38	5967.88	5959.50	5953.22	QUARTERLY WATER LEVEL
SEP	P207689	22-JUL-94	8.66	5967.88	5959.22	5953.22	
SEP	P207689	04-OCT-94	9.13	5967.88	5958.75	5953.22	QUARTERLY WATER LEVEL
SEP	P207689	10-OCT-94	8.67	5967.88	5959.21	5953.22	
SEP	P207789	06-JAN-94	29.20	5967.75	5938.55	5938.54	QUARTERLY WATER LEVEL
SEP	P207789	18-JAN-94	29.05	5967.75	5938.70	5938.54	
SEP	P207789	05-APR-94	29.37	5967.75	5938.38	5938.54	QUARTERLY WATER LEVEL
SEP	P207789	12-APR-94	29.30	5967.75	5938.45	5938.54	HIGH WINDS CAUSES RE SAMPLE
SEP	P207789	20-APR-94	30.27	5967.75	5937.48	5938.54	
SEP	P207789	01-JUL-94	29.44	5967.75	5938.31	5938.54	QUARTERLY WATER LEVEL
SEP	P207789	28-JUL-94	29.16	5967.75	5938.59	5938.54	

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
SEP	P207789	04-OCT-94	29.46	5967.75	5938.29	5938.54	QUARTERLY WATER LEVEL
SEP	P207789	06-OCT-94	29.41	5967.75	5938.34	5938.54	
SEP	P207889	06-JAN-94	8.03	5964.90	5956.87	5955.12	QUARTERLY WATER LEVEL
SEP	P207889	18-JAN-94	8.06	5964.90	5956.84	5955.12	
SEP	P207889	05-APR-94	5.23	5964.90	5959.67	5955.12	QUARTERLY WATER LEVEL
SEP	P207889	11-APR-94	3.61	5964.90	5961.29	5955.12	
SEP	P207889	01-JUL-94	7.53	5964.90	5957.37	5955.12	QUARTERLY WATER LEVEL
SEP	P207889	21-JUL-94	9.28	5964.90	5955.62	5955.12	
SEP	P207889	04-OCT-94	10.78	5964.90	5954.12	5955.12	QUARTERLY WATER LEVEL
SEP	P207989	06-JAN-94	19.14	5965.17	5946.03	5942.61	QUARTERLY WATER LEVEL
SEP	P207989	18-JAN-94	18.65	5965.17	5946.52	5942.61	
SEP	P207989	05-APR-94	19.37	5965.17	5945.80	5942.61	QUARTERLY WATER LEVEL
SEP	P207989	11-APR-94	19.06	5965.17	5946.11	5942.61	
SEP	P207989	01-JUL-94	19.37	5965.17	5945.80	5942.61	QUARTERLY WATER LEVEL
SEP	P207989	02-AUG-94	17.85	5965.17	5947.32	5942.61	
SEP	P207989	04-OCT-94	19.73	5965.17	5945.44	5942.61	QUARTERLY WATER LEVEL
SEP	P207989	10-OCT-94	19.42	5965.17	5945.75	5942.61	
SEP	P208889	10-JAN-94	88.46	5949.25	5860.79	5850.36	QUARTERLY WATER LEVEL
SEP	P208889	07-FEB-94	83.38	5949.25	5865.87	5850.36	
SEP	P208889	05-APR-94	92.14	5949.25	5857.11	5850.36	QUARTERLY WATER LEVEL
SEP	P208889	14-APR-94	90.84	5949.25	5858.41	5850.36	
SEP	P208889	01-JUL-94	88.62	5949.25	5860.63	5850.36	QUARTERLY WATER LEVEL
SEP	P208889	02-AUG-94	82.85	5949.25	5866.40	5850.36	
SEP	P208889	04-OCT-94	90.79	5949.25	5858.46	5850.36	QUARTERLY WATER LEVEL
SEP	P208889	12-OCT-94	89.30	5949.25	5859.95	5850.36	
SEP	P208989	10-JAN-94	18.16	5964.56	5946.40	5937.69	QUARTERLY WATER LEVEL
SEP	P208989	02-FEB-94	18.25	5964.56	5946.31	5937.69	
SEP	P208989	04-APR-94	17.36	5964.56	5947.20	5937.69	QUARTERLY WATER LEVEL
SEP	P208989	18-APR-94	16.80	5964.56	5947.76	5937.69	
SEP	P208989	01-JUL-94	17.00	5964.56	5947.56	5937.69	QUARTERLY WATER LEVEL
SEP	P208989	25-JUL-94	17.32	5964.56	5947.24	5937.69	
SEP	P208989	04-OCT-94	17.96	5964.56	5946.60	5937.69	QUARTERLY WATER LEVEL
SEP	P208989	26-OCT-94	18.04	5964.56	5946.52	5937.69	
SEP	P209089	11-JAN-94	24.97	5974.25	5949.28	5946.20	QUARTERLY WATER LEVEL
SEP	P209089	24-JAN-94	24.50	5974.25	5949.75	5946.20	
SEP	P209089	07-APR-94	25.91	5974.25	5948.34	5946.20	
SEP	P209089	06-APR-94	25.97	5974.25	5948.28	5946.20	QUARTERLY WATER LEVEL
SEP	P209089	06-JUL-94	25.44	5974.25	5948.81	5946.20	QUARTERLY WATER LEVEL
SEP	P209089	08-AUG-94	24.20	5974.25	5950.05	5946.20	
SEP	P209089	05-OCT-94	25.95	5974.25	5948.30	5946.20	QUARTERLY WATER LEVEL
SEP	P209089	19-OCT-94	25.32	5974.25	5948.93	5946.20	
SEP	P209189	10-JAN-94	13.46	5982.21	5968.75	5945.65	QUARTERLY WATER LEVEL

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
SEP	P209189	04-APR-94	10.86	5982.21	5971.35	5945.65	QUARTERLY WATER LEVEL
SEP	P209189	05-JUL-94	12.48	5982.21	5969.73	5945.65	QUARTERLY WATER LEVEL
SEP	P209189	05-OCT-94	13.97	5982.21	5968.24	5945.65	QUARTERLY WATER LEVEL
SEP	P209189	10-NOV-94	12.63	5982.21	5969.58	5945.65	
SEP	P209289	10-JAN-94	14.69	5983.42	5968.73	5968.93	QUARTERLY WATER LEVEL
SEP	P209289	25-JAN-94	14.73	5983.42	5968.69	5968.93	
SEP	P209289	01-FEB-94	15.22	5983.42	5968.20	5968.93	MONTHLY WATER LEVEL
SEP	P209289	03-MAR-94	15.24	5983.42	5968.18	5968.93	MONTHLY WATER LEVEL
SEP	P209289	05-APR-94	15.07	5983.42	5968.35	5968.93	QUARTERLY WATER LEVEL
SEP	P209289	11-APR-94	14.90	5983.42	5968.52	5968.93	
SEP	P209289	02-MAY-94	14.12	5983.42	5969.30	5968.93	MONTHLY WATER LEVEL
SEP	P209289	02-JUN-94	14.71	5983.42	5968.71	5968.93	MONTHLY WATER LEVEL
SEP	P209289	05-JUL-94	14.74	5983.42	5968.68	5968.93	QUARTERLY WATER LEVEL
SEP	P209289	01-AUG-94	14.73	5983.42	5968.69	5968.93	MONTHLY WATER LEVEL
SEP	P209289	04-AUG-94	14.74	5983.42	5968.68	5968.93	
SEP	P209289	01-SEP-94	-1.00	5983.42	DRY	5968.93	MONTHLY WATER LEVEL
SEP	P209289	04-OCT-94	15.27	5983.42	5968.15	5968.93	QUARTERLY WATER LEVEL/TECHNICALLY DRY
SEP	P209289	02-NOV-94	15.27	5983.42	5968.15	5968.93	MONTHLY WATER LEVEL
SEP	P209389	10-JAN-94	19.82	5983.39	5963.57	5952.67	QUARTERLY WATER LEVEL
SEP	P209389	14-JAN-94	19.81	5983.39	5963.58	5952.67	
SEP	P209389	25-JAN-94	19.70	5983.39	5963.69	5952.67	
SEP	P209389	05-APR-94	18.20	5983.39	5965.19	5952.67	QUARTERLY WATER LEVEL
SEP	P209389	11-APR-94	17.87	5983.39	5965.52	5952.67	
SEP	P209389	05-JUL-94	19.08	5983.39	5964.31	5952.67	QUARTERLY WATER LEVEL
SEP	P209389	13-JUL-94	19.22	5983.39	5964.17	5952.67	
SEP	P209389	04-OCT-94	18.94	5983.39	5964.45	5952.67	QUARTERLY WATER LEVEL
SEP	P209389	17-OCT-94	18.87	5983.39	5964.52	5952.67	
SEP	P209489	10-JAN-94	29.52	5980.10	5950.58	5942.98	QUARTERLY WATER LEVEL
SEP	P209489	24-JAN-94	29.68	5980.10	5950.42	5942.98	
SEP	P209489	12-APR-94	27.69	5980.10	5952.41	5942.98	
SEP	P209489	04-APR-94	28.55	5980.10	5951.55	5942.98	QUARTERLY WATER LEVEL
SEP	P209489	05-JUL-94	28.99	5980.10	5951.11	5942.98	QUARTERLY WATER LEVEL
SEP	P209489	13-JUL-94	29.05	5980.10	5951.05	5942.98	
SEP	P209489	05-OCT-94	29.36	5980.10	5950.74	5942.98	QUARTERLY WATER LEVEL
SEP	P209489	17-OCT-94	29.54	5980.10	5950.56	5942.98	
SEP	P209589	10-JAN-94	19.69	5950.04	5930.35	5929.65	QUARTERLY WATER LEVEL
SEP	P209589	07-FEB-94	19.13	5950.04	5930.91	5929.65	
SEP	P209589	05-APR-94	20.14	5950.04	5929.90	5929.65	QUARTERLY WATER LEVEL
SEP	P209589	18-APR-94	19.76	5950.04	5930.28	5929.65	
SEP	P209589	01-JUL-94	18.96	5950.04	5931.08	5929.65	QUARTERLY WATER LEVEL
SEP	P209589	02-AUG-94	18.17	5950.04	5931.87	5929.65	
SEP	P209589	04-OCT-94	20.06	5950.04	5929.98	5929.65	QUARTERLY WATER LEVEL

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
SEP	P209589	12-OCT-94	19.88	5950.04	5930.16	5929.65	
SEP	P209689	06-JAN-94	28.38	5964.43	5936.05	5935.96	QUARTERLY WATER LEVEL
SEP	P209689	18-JAN-94	28.23	5964.43	5936.20	5935.96	
SEP	P209689	05-APR-94	28.66	5964.43	5935.77	5935.96	QUARTERLY WATER LEVEL
SEP	P209689	14-APR-94	28.56	5964.43	5935.87	5935.96	
SEP	P209689	01-JUL-94	28.42	5964.43	5936.01	5935.96	QUARTERLY WATER LEVEL
SEP	P209689	28-JUL-94	28.14	5964.43	5936.29	5935.96	
SEP	P209689	04-OCT-94	28.56	5964.43	5935.87	5935.96	QUARTERLY WATER LEVEL
SEP	P209689	10-OCT-94	28.46	5964.43	5935.97	5935.96	
SEP	P209789	06-JAN-94	10.03	5964.94	5954.91	5950.32	QUARTERLY WATER LEVEL
SEP	P209789	31-JAN-94	10.57	5964.94	5954.37	5950.32	
SEP	P209789	05-APR-94	7.98	5964.94	5956.96	5950.32	QUARTERLY WATER LEVEL
SEP	P209789	26-APR-94	5.42	5964.94	5959.52	5950.32	
SEP	P209789	01-JUL-94	7.63	5964.94	5957.31	5950.32	QUARTERLY WATER LEVEL
SEP	P209789	29-JUL-94	9.28	5964.94	5955.66	5950.32	
SEP	P209789	04-OCT-94	11.04	5964.94	5953.90	5950.32	QUARTERLY WATER LEVEL
SEP	P209789	12-OCT-94	11.20	5964.94	5953.74	5950.32	
SEP	P209889	10-JAN-94	5.79	5942.40	5936.61	5921.95	QUARTERLY WATER LEVEL
SEP	P209889	04-APR-94	5.12	5942.40	5937.28	5921.95	QUARTERLY WATER LEVEL
SEP	P209889	18-APR-94	5.14	5942.40	5937.26	5921.95	
SEP	P209889	01-JUL-94	4.97	5942.40	5937.43	5921.95	QUARTERLY WATER LEVEL
SEP	P209889	25-JUL-94	5.39	5942.40	5937.01	5921.95	
SEP	P209889	04-OCT-94	6.18	5942.40	5936.22	5921.95	QUARTERLY WATER LEVEL
SEP	P209889	17-OCT-94	6.22	5942.40	5936.18	5921.95	
SEP	P209989	03-JAN-94	-1.00	5900.40	DRY	5889.92	QUARTERLY WATER LEVEL/NOT SAMPLED
SEP	P209989	03-FEB-94	-1.00	5900.40	DRY	5889.92	MONTHLY WATER LEVEL
SEP	P209989	02-MAR-94	11.78	5900.40	5888.62	5889.92	MONTHLY WATER LEVEL/.3FT TECHNICALLY DRY
SEP	P209989	05-APR-94	-1.00	5900.40	DRY	5889.92	QUARTERLY WATER LEVEL
SEP	P209989	02-MAY-94	-1.00	5900.40	DRY	5889.92	MONTHLY WATER LEVEL
SEP	P209989	03-JUN-94	-1.00	5900.40	DRY	5889.92	MONTHLY WATER LEVEL
SEP	P209989	06-JUL-94	-1.00	5900.40	DRY	5889.92	QUARTERLY WATER LEVEL
SEP	P209989	01-AUG-94	-1.00	5900.40	DRY	5889.92	MONTHLY WATER LEVEL
SEP	P209989	06-SEP-94	-1.00	5900.40	DRY	5889.92	MONTHLY WATER LEVEL
SEP	P209989	07-OCT-94	-1.00	5900.40	DRY	5889.92	QUARTERLY WATER LEVEL
SEP	P209989	02-NOV-94	-1.00	5900.40	DRY	5889.92	MONTHLY WATER LEVEL
SEP	P210089	03-JAN-94	19.51	5900.40	5880.89	5876.90	QUARTERLY WATER LEVEL
SEP	P210089	26-JAN-94	19.03	5900.40	5881.37	5876.90	
SEP	P210089	05-APR-94	19.95	5900.40	5880.45	5876.90	QUARTERLY WATER LEVEL
SEP	P210089	11-APR-94	19.78	5900.40	5880.62	5876.90	
SEP	P210089	06-JUL-94	19.23	5900.40	5881.17	5876.90	QUARTERLY WATER LEVEL
SEP	P210089	04-AUG-94	18.46	5900.40	5881.94	5876.90	
SEP	P210089	07-OCT-94	19.51	5900.40	5880.89	5876.90	QUARTERLY WATER LEVEL

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
SEP	P210089	17-OCT-94	19.11	5900.40	5881.29	5876.90	
SEP	P210189	10-JAN-94	14.51	5982.48	5967.97	5944.77	QUARTERLY WATER LEVEL
SEP	P210189	04-APR-94	13.23	5982.48	5969.25	5944.77	QUARTERLY WATER LEVEL
SEP	P210189	27-APR-94	12.72	5982.48	5969.76	5944.77	
SEP	P210189	05-JUL-94	13.72	5982.48	5968.76	5944.77	QUARTERLY WATER LEVEL
SEP	P210189	15-JUL-94	14.07	5982.48	5968.41	5944.77	
SEP	P210189	05-OCT-94	15.01	5982.48	5967.47	5944.77	QUARTERLY WATER LEVEL
SEP	P210189	21-OCT-94	15.17	5982.48	5967.31	5944.77	
SEP	P213889	07-JAN-94	-1.00	5955.94	DRY	5933.27	QUARTERLY WATER LEVEL
SEP	P213889	03-FEB-94	-1.00	5955.94	DRY	5933.27	MONTHLY WATER LEVEL
SEP	P213889	01-MAR-94	-1.00	5955.94	DRY	5933.27	MONTHLY WATER LEVEL
SEP	P213889	06-APR-94	-1.00	5955.94	DRY	5933.27	QUARTERLY WATER LEVEL
SEP	P213889	02-MAY-94	-1.00	5955.94	DRY	5933.27	MONTHLY WATER LEVEL
SEP	P213889	01-JUN-94	-1.00	5955.94	DRY	5933.27	MONTHLY WATER LEVEL
SEP	P213889	11-JUL-94	-1.00	5955.94	DRY	5933.27	QUARTERLY WATER LEVEL
SEP	P213889	01-AUG-94	-1.00	5955.94	DRY	5933.27	MONTHLY WATER LEVEL
SEP	P213889	02-SEP-94	-1.00	5955.94	DRY	5933.27	MONTHLY WATER LEVEL
SEP	P213889	07-OCT-94	-1.00	5955.94	DRY	5933.27	QUARTERLY WATER LEVEL
SEP	P213889	02-NOV-94	-1.00	5955.94	DRY	5933.27	MONTHLY WATER LEVEL
SEP	P213989	07-JAN-94	-1.00	5956.38	DRY	5947.38	QUARTERLY WATER LEVEL
SEP	P213989	03-FEB-94	-1.00	5956.38	DRY	5947.38	MONTHLY WATER LEVEL
SEP	P213989	01-MAR-94	-1.00	5956.38	DRY	5947.38	MONTHLY WATER LEVEL
SEP	P213989	06-APR-94	-1.00	5956.38	DRY	5947.38	QUARTERLY WATER LEVEL
SEP	P213989	02-MAY-94	-1.00	5956.38	DRY	5947.38	MONTHLY WATER LEVEL
SEP	P213989	01-JUN-94	-1.00	5956.38	DRY	5947.38	MONTHLY WATER LEVEL
SEP	P213989	11-JUL-94	-1.00	5956.38	DRY	5947.38	QUARTERLY WATER LEVEL
SEP	P213989	01-AUG-94	-1.00	5956.38	DRY	5947.38	MONTHLY WATER LEVEL
SEP	P213989	02-SEP-94	-1.00	5956.38	DRY	5947.38	MONTHLY WATER LEVEL
SEP	P213989	07-OCT-94	-1.00	5956.38	DRY	5947.38	QUARTERLY WATER LEVEL
SEP	P213989	02-NOV-94	-1.00	5956.38	DRY	5947.38	MONTHLY WATER LEVEL
SEP	P218089	11-JAN-94	7.99	5987.55	5979.56	5978.37	QUARTERLY WATER LEVEL
SEP	P218089	26-JAN-94	6.36	5987.55	5981.19	5978.37	
SEP	P218089	06-APR-94	5.32	5987.55	5982.23	5978.37	QUARTERLY WATER LEVEL
SEP	P218089	05-JUL-94	6.95	5987.55	5980.60	5978.37	QUARTERLY WATER LEVEL
SEP	P218089	14-JUL-94	6.98	5987.55	5980.57	5978.37	QUARTERLY WATER LEVEL
SEP	P218089	04-OCT-94	6.56	5987.55	5980.99	5978.37	QUARTERLY WATER LEVEL
SEP	P218389	06-JAN-94	14.80	5958.45	5943.65	5943.70	QUARTERLY WATER LEVEL
SEP	P218389	01-FEB-94	14.84	5958.45	5943.61	5943.70	MONTHLY WATER LEVEL
SEP	P218389	10-FEB-94	14.84	5958.45	5943.61	5943.70	DRY 2ND DAY
SEP	P218389	03-MAR-94	13.93	5958.45	5944.52	5943.70	MONTHLY WATER LEVEL
SEP	P218389	05-APR-94	13.57	5958.45	5944.88	5943.70	QUARTERLY WATER LEVEL
SEP	P218389	27-APR-94	10.47	5958.45	5947.98	5943.70	

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
SEP	P218389	02-MAY-94	8.12	5958.45	5950.33	5943.70	MONTHLY WATER LEVEL
SEP	P218389	02-JUN-94	11.57	5958.45	5946.88	5943.70	MONTHLY WATER LEVEL
SEP	P218389	01-JUL-94	12.76	5958.45	5945.69	5943.70	QUARTERLY WATER LEVEL
SEP	P218389	01-AUG-94	13.93	5958.45	5944.52	5943.70	MONTHLY WATER LEVEL
SEP	P218389	02-AUG-94	13.94	5958.45	5944.51	5943.70	
SEP	P218389	01-SEP-94	14.39	5958.45	5944.06	5943.70	MONTHLY WATER LEVEL
SEP	P218389	04-OCT-94	14.81	5958.45	5943.64	5943.70	QUARTERLY WATER LEVEL
SEP	P218389	10-OCT-94	14.83	5958.45	5943.62	5943.70	
SEP	P218389	02-NOV-94	14.78	5958.45	5943.67	5943.70	MONTHLY WATER LEVEL
SEP	P219189	10-JAN-94	12.98	5943.15	5930.17	5929.70	QUARTERLY WATER LEVEL
SEP	P219189	01-FEB-94	12.79	5943.15	5930.36	5929.70	MONTHLY WATER LEVEL
SEP	P219189	07-FEB-94	12.73	5943.15	5930.42	5929.70	
SEP	P219189	03-MAR-94	13.67	5943.15	5929.48	5929.70	MONTHLY WATER LEVEL
SEP	P219189	04-APR-94	13.02	5943.15	5930.13	5929.70	QUARTERLY WATER LEVEL
SEP	P219189	28-APR-94	12.54	5943.15	5930.61	5929.70	
SEP	P219189	02-MAY-94	14.07	5943.15	5929.08	5929.70	MONTHLY WATER LEVEL
SEP	P219189	03-JUN-94	13.05	5943.15	5930.10	5929.70	MONTHLY WATER LEVEL
SEP	P219189	05-JUL-94	12.53	5943.15	5930.62	5929.70	QUARTERLY WATER LEVEL
SEP	P219189	01-AUG-94	12.20	5943.15	5930.95	5929.70	MONTHLY WATER LEVEL
SEP	P219189	09-AUG-94	12.10	5943.15	5931.05	5929.70	
SEP	P219189	01-SEP-94	13.96	5943.15	5929.19	5929.70	MONTHLY WATER LEVEL
SEP	P219189	04-OCT-94	13.24	5943.15	5929.91	5929.70	QUARTERLY WATER LEVEL
SEP	P219189	26-OCT-94	12.96	5943.15	5930.19	5929.70	
SEP	P219189	02-NOV-94	14.42	5943.15	5928.73	5929.70	MONTHLY WATER LEVEL
SEP	P219489	06-JAN-94	23.51	5961.15	5937.64	5936.60	QUARTERLY WATER LEVEL
SEP	P219489	01-FEB-94	23.10	5961.15	5938.05	5936.60	MONTHLY WATER LEVEL
SEP	P219489	10-FEB-94	22.98	5961.15	5938.17	5936.60	
SEP	P219489	03-MAR-94	24.52	5961.15	5936.63	5936.60	MONTHLY WATER LEVEL
SEP	P219489	05-APR-94	23.96	5961.15	5937.19	5936.60	QUARTERLY WATER LEVEL
SEP	P219489	27-APR-94	23.53	5961.15	5937.62	5936.60	
SEP	P219489	02-MAY-94	24.73	5961.15	5936.42	5936.60	MONTHLY WATER LEVEL
SEP	P219489	02-JUN-94	24.02	5961.15	5937.13	5936.60	MONTHLY WATER LEVEL
SEP	P219489	01-JUL-94	23.38	5961.15	5937.77	5936.60	QUARTERLY WATER LEVEL
SEP	P219489	01-AUG-94	22.84	5961.15	5938.31	5936.60	MONTHLY WATER LEVEL
SEP	P219489	02-AUG-94	22.83	5961.15	5938.32	5936.60	
SEP	P219489	01-SEP-94	24.33	5961.15	5936.82	5936.60	MONTHLY WATER LEVEL
SEP	P219489	04-OCT-94	24.04	5961.15	5937.11	5936.60	QUARTERLY WATER LEVEL
SEP	P219489	10-OCT-94	23.91	5961.15	5937.24	5936.60	
SEP	P219489	02-NOV-94	24.69	5961.15	5936.46	5936.60	MONTHLY WATER LEVEL
SEP	P219589	06-JAN-94	27.10	5965.70	5938.60	5938.10	QUARTERLY WATER LEVEL
SEP	P219589	01-FEB-94	26.84	5965.70	5938.86	5938.10	MONTHLY WATER LEVEL
SEP	P219589	10-FEB-94	26.79	5965.70	5938.91	5938.10	

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
SEP	P219589	03-MAR-94	27.74	5965.70	5937.96	5938.10	MONTHLY WATER LEVEL
SEP	P219589	05-APR-94	27.44	5965.70	5938.26	5938.10	QUARTERLY WATER LEVEL
SEP	P219589	27-APR-94	27.27	5965.70	5938.43	5938.10	
SEP	P219589	02-MAY-94	28.20	5965.70	5937.50	5938.10	MONTHLY WATER LEVEL
SEP	P219589	02-JUN-94	27.51	5965.70	5938.19	5938.10	MONTHLY WATER LEVEL
SEP	P219589	01-JUL-94	27.20	5965.70	5938.50	5938.10	QUARTERLY WATER LEVEL
SEP	P219589	01-AUG-94	26.98	5965.70	5938.72	5938.10	MONTHLY WATER LEVEL
SEP	P219589	02-AUG-94	26.94	5965.70	5938.76	5938.10	
SEP	P219589	01-SEP-94	27.69	5965.70	5938.01	5938.10	MONTHLY WATER LEVEL
SEP	P219589	04-OCT-94	27.55	5965.70	5938.15	5938.10	QUARTERLY WATER LEVEL
SEP	P219589	12-OCT-94	27.48	5965.70	5938.22	5938.10	
SEP	P219589	02-NOV-94	27.95	5965.70	5937.75	5938.10	MONTHLY WATER LEVEL
WSF	0190	04-JAN-94	39.21	6045.88	6006.67	5999.80	QUARTERLY WATER LEVEL
WSF	0190	04-FEB-94	39.39	6045.88	6006.49	5999.80	
WSF	0190	04-APR-94	38.87	6045.88	6007.01	5999.80	QUARTERLY WATER LEVEL
WSF	0190	02-MAY-94	36.98	6045.88	6008.90	5999.80	
WSF	0190	07-JUL-94	36.81	6045.88	6009.07	5999.80	QUARTERLY WATER LEVEL
WSF	0190	24-AUG-94	37.89	6045.88	6007.99	5999.80	
WSF	0190	03-OCT-94	38.41	6045.88	6007.47	5999.80	QUARTERLY WATER LEVEL
WSF	0190	07-NOV-94	38.71	6045.88	6007.17	5999.80	
WSF	03092	04-JAN-94	-1.00	6060.90	DRY	6028.20	QUARTERLY WATER LEVEL/NOT DEVELOPED
WSF	03092	04-APR-94	-1.00	6060.90	DRY	6028.20	QUARTERLY WATER LEVEL/NOT DEVELOPED
WSF	03092	07-JUL-94	-1.00	6060.90	DRY	6028.20	QUARTERLY WATER LEVEL
WSF	03092	02-SEP-94	-1.00	6060.90	DRY	6028.20	MONTHLY WATER LEVEL
WSF	03092	03-OCT-94	-1.00	6060.90	DRY	6028.20	QUARTERLY WATER LEVEL
WSF	03092	02-NOV-94	-1.00	6060.90	DRY	6028.20	MONTHLY WATER LEVEL
WSF	03192	04-JAN-94	-1.00	6068.58	DRY	6036.00	QUARTERLY WATER LEVEL/NOT DEVELOPED
WSF	03192	04-APR-94	-1.00	6068.58	DRY	6036.00	QUARTERLY WATER LEVEL/NOT DEVELOPED
WSF	03192	07-JUL-94	-1.00	6068.58	DRY	6036.00	QUARTERLY WATER LEVEL
WSF	03192	02-SEP-94	-1.00	6068.58	DRY	6036.00	MONTHLY WATER LEVEL
WSF	03192	03-OCT-94	-1.00	6068.58	DRY	6036.00	QUARTERLY WATER LEVEL
WSF	03192	02-NOV-94	-1.00	6068.58	DRY	6036.00	MONTHLY WATER LEVEL
WSF	0390	04-JAN-94	56.88	6079.13	6022.25	6010.40	QUARTERLY WATER LEVEL
WSF	0390	09-FEB-94	57.09	6079.13	6022.04	6010.40	
WSF	0390	04-APR-94	57.06	6079.13	6022.07	6010.40	QUARTERLY WATER LEVEL
WSF	0390	03-MAY-94	57.30	6079.13	6021.83	6010.40	
WSF	0390	07-JUL-94	56.65	6079.13	6022.48	6010.40	QUARTERLY WATER LEVEL
WSF	0390	06-SEP-94	56.65	6079.13	6022.48	6010.40	
WSF	0390	03-OCT-94	56.63	6079.13	6022.50	6010.40	QUARTERLY WATER LEVEL
WSF	0390	07-NOV-94	56.60	6079.13	6022.53	6010.40	
WSF	1490	04-JAN-94	52.48	6071.28	6018.80	6009.40	QUARTERLY WATER LEVEL
WSF	1490	04-FEB-94	52.55	6071.28	6018.73	6009.40	

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
WSF	1490	04-APR-94	52.69	6071.28	6018.59	6009.40	QUARTERLY WATER LEVEL
WSF	1490	03-MAY-94	52.52	6071.28	6018.76	6009.40	
WSF	1490	07-JUL-94	51.01	6071.28	6020.27	6009.40	QUARTERLY WATER LEVEL
WSF	1490	24-AUG-94	51.44	6071.28	6019.84	6009.40	
WSF	1490	03-OCT-94	51.73	6071.28	6019.55	6009.40	QUARTERLY WATER LEVEL
WSF	1490	07-NOV-94	51.90	6071.28	6019.38	6009.40	
WSF	46192	03-JAN-94	72.37	6143.37	6071.00	6064.30	QUARTERLY WATER LEVEL
WSF	46192	02-MAR-94	72.56	6143.37	6070.81	6064.30	
WSF	46192	04-APR-94	72.52	6143.37	6070.85	6064.30	QUARTERLY WATER LEVEL
WSF	46192	13-APR-94	72.50	6143.37	6070.87	6064.30	
WSF	46192	07-JUL-94	72.60	6143.37	6070.77	6064.30	QUARTERLY WATER LEVEL
WSF	46192	18-AUG-94	72.69	6143.37	6070.68	6064.30	
WSF	46192	03-OCT-94	72.77	6143.37	6070.60	6064.30	QUARTERLY WATER LEVEL
WSF	46192	18-OCT-94	72.70	6143.37	6070.67	6064.30	
WSF	46292	03-JAN-94	54.97	6097.24	6042.27	6004.80	QUARTERLY WATER LEVEL
WSF	46292	04-MAR-94	57.78	6097.24	6039.46	6004.80	
WSF	46292	04-APR-94	55.45	6097.24	6041.79	6004.80	QUARTERLY WATER LEVEL
WSF	46292	22-APR-94	55.77	6097.24	6041.47	6004.80	
WSF	46292	07-JUL-94	54.63	6097.24	6042.61	6004.80	QUARTERLY WATER LEVEL
WSF	46292	16-AUG-94	54.44	6097.24	6042.80	6004.80	
WSF	46292	04-OCT-94	54.89	6097.24	6042.35	6004.80	QUARTERLY WATER LEVEL
WSF	46292	19-OCT-94	54.85	6097.24	6042.39	6004.80	
WSF	46392	03-JAN-94	34.32	6065.03	6030.71	5983.70	QUARTERLY WATER LEVEL
WSF	46392	02-MAR-94	35.01	6065.03	6030.02	5983.70	
WSF	46392	04-APR-94	34.65	6065.03	6030.38	5983.70	QUARTERLY WATER LEVEL
WSF	46392	20-APR-94	34.38	6065.03	6030.65	5983.70	
WSF	46392	07-JUL-94	32.17	6065.03	6032.86	5983.70	QUARTERLY WATER LEVEL
WSF	46392	17-AUG-94	33.05	6065.03	6031.98	5983.70	
WSF	46392	03-OCT-94	33.55	6065.03	6031.48	5983.70	QUARTERLY WATER LEVEL
WSF	46392	24-OCT-94	33.98	6065.03	6031.05	5983.70	
WSF	46492	03-JAN-94	29.90	6056.81	6026.91	6011.50	QUARTERLY WATER LEVEL
WSF	46492	28-JAN-94	29.47	6056.81	6027.34	6011.50	
WSF	46492	04-APR-94	28.30	6056.81	6028.51	6011.50	QUARTERLY WATER LEVEL
WSF	46492	25-MAY-94	23.48	6056.81	6033.33	6011.50	
WSF	46492	07-JUL-94	24.71	6056.81	6032.10	6011.50	QUARTERLY WATER LEVEL
WSF	46492	30-AUG-94	27.14	6056.81	6029.67	6011.50	
WSF	46492	03-OCT-94	28.17	6056.81	6028.64	6011.50	QUARTERLY WATER LEVEL
WSF	46492	11-NOV-94	28.72	6056.81	6028.09	6011.50	
WSF	4686	03-JAN-94	114.07	6083.99	5969.92	5921.20	QUARTERLY WATER LEVEL
WSF	4686	07-FEB-94	92.49	6083.99	5991.50	5921.20	
WSF	4686	04-APR-94	94.85	6083.99	5989.14	5921.20	QUARTERLY WATER LEVEL
WSF	4686	13-JUN-94	83.45	6083.99	6000.54	5921.20	

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
WSF	4686	07-JUL-94	111.32	6083.99	5972.67	5921.20	QUARTERLY WATER LEVEL
WSF	4686	07-AUG-94	101.58	6083.99	5982.41	5921.20	
WSF	4686	03-OCT-94	96.56	6083.99	5987.43	5921.20	QUARTERLY WATER LEVEL
WSF	4786	03-JAN-94	59.83	6083.67	6023.84	5987.41	QUARTERLY WATER LEVEL
WSF	4786	24-JAN-94	59.88	6083.67	6023.79	5987.41	
WSF	4786	01-FEB-94	60.02	6083.67	6023.65	5987.41	MONTHLY WATER LEVEL
WSF	4786	07-MAR-94	60.35	6083.67	6023.32	5987.41	MONTHLY WATER LEVEL
WSF	4786	04-APR-94	60.06	6083.67	6023.61	5987.41	QUARTERLY WATER LEVEL
WSF	4786	02-MAY-94	60.37	6083.67	6023.30	5987.41	MONTHLY WATER LEVEL
WSF	4786	06-JUN-94	59.58	6083.67	6024.09	5987.41	MONTHLY WATER LEVEL
WSF	4786	13-JUN-94	59.45	6083.67	6024.22	5987.41	
WSF	4786	07-JUL-94	59.48	6083.67	6024.19	5987.41	QUARTERLY WATER LEVEL
WSF	4786	27-JUL-94	59.38	6083.67	6024.29	5987.41	
WSF	4786	04-AUG-94	59.54	6083.67	6024.13	5987.41	MONTHLY WATER LEVEL
WSF	4786	03-OCT-94	59.47	6083.67	6024.20	5987.41	QUARTERLY WATER LEVEL
WSF	4786	01-NOV-94	59.21	6083.67	6024.46	5987.41	MONTHLY WATER LEVEL
WSF	4786	09-NOV-94	59.65	6083.67	6024.02	5987.41	
WSF	4886	03-JAN-94	68.15	6099.10	6030.95	5890.07	QUARTERLY WATER LEVEL
WSF	4886	24-JAN-94	61.68	6099.10	6037.42	5890.07	
WSF	4886	12-APR-94	60.35	6099.10	6038.75	5890.07	
WSF	4886	04-APR-94	60.72	6099.10	6038.38	5890.07	QUARTERLY WATER LEVEL
WSF	4886	07-JUL-94	60.58	6099.10	6038.52	5890.07	QUARTERLY WATER LEVEL
WSF	4886	11-AUG-94	59.82	6099.10	6039.28	5890.07	
WSF	4886	04-OCT-94	61.93	6099.10	6037.17	5890.07	QUARTERLY WATER LEVEL
WSF	4886	19-OCT-94	60.91	6099.10	6038.19	5890.07	
WSF	4986	03-JAN-94	51.46	6098.89	6047.43	6029.77	QUARTERLY WATER LEVEL
WSF	4986	21-JAN-94	52.09	6098.89	6046.80	6029.77	
WSF	4986	14-APR-94	51.90	6098.89	6046.99	6029.77	
WSF	4986	04-APR-94	51.94	6098.89	6046.95	6029.77	QUARTERLY WATER LEVEL
WSF	4986	07-JUL-94	50.89	6098.89	6048.00	6029.77	QUARTERLY WATER LEVEL
WSF	4986	02-AUG-94	50.84	6098.89	6048.05	6029.77	
WSF	4986	04-OCT-94	51.40	6098.89	6047.49	6029.77	QUARTERLY WATER LEVEL
WSF	50194	02-SEP-94	58.63	6116.29	6057.66	6019.70	
WSF	50194	01-SEP-94	58.68	6116.29	6057.61	6019.70	MONTHLY WATER LEVEL
WSF	50194	29-AUG-94	58.52	6116.29	6057.77	6019.70	
WSF	50194	03-OCT-94	58.42	6116.29	6057.87	6019.70	QUARTERLY WATER LEVEL
WSF	50194	01-NOV-94	58.01	6116.29	6058.28	6019.70	MONTHLY WATER LEVEL
WSF	50294	06-SEP-94	17.45	6143.91	6126.46	6126.10	
WSF	50294	02-SEP-94	18.32	6143.91	6125.59	6126.10	MONTHLY WATER LEVEL
WSF	50294	03-OCT-94	17.41	6143.91	6126.50	6126.10	QUARTERLY WATER LEVEL
WSF	50294	02-NOV-94	18.48	6143.91	6125.43	6126.10	MONTHLY WATER LEVEL
WSF	50394	06-SEP-94	64.22	6122.21	6057.99	6055.80	

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
WSF	50394	02-SEP-94	66.28	6122.21	6055.93	6055.80	MONTHLY WATER LEVEL
WSF	50394	03-OCT-94	59.32	6122.21	6062.89	6055.80	QUARTERLY WATER LEVEL
WSF	50394	02-NOV-94	58.28	6122.21	6063.93	6055.80	MONTHLY WATER LEVEL
WSF	50494	28-SEP-94	-1.00	6094.34	DRY	6070.60	
WSF	50494	03-OCT-94	-1.00	6094.34	DRY	6070.60	QUARTERLY WATER LEVEL
WSF	50694	01-SEP-94	29.07	6087.50	6058.43	6058.70	MONTHLY WATER LEVEL
WSF	50694	30-AUG-94	28.61	6087.50	6058.89	6058.70	
WSF	50694	04-OCT-94	21.00	6087.50	6066.50	6058.70	QUARTERLY WATER LEVEL
WSF	50694	01-NOV-94	20.46	6087.50	6067.04	6058.70	MONTHLY WATER LEVEL
WSF	50794	01-SEP-94	12.76	6134.81	6122.05	6109.80	MONTHLY WATER LEVEL
WSF	50794	31-AUG-94	7.56	6134.81	6127.25	6109.80	
WSF	50794	03-OCT-94	8.23	6134.81	6126.58	6109.80	QUARTERLY WATER LEVEL
WSF	50794	02-NOV-94	9.21	6134.81	6125.60	6109.80	MONTHLY WATER LEVEL
WSF	5086	03-JAN-94	51.09	6122.94	6071.85	6024.89	QUARTERLY WATER LEVEL
WSF	5086	01-FEB-94	51.37	6122.94	6071.57	6024.89	MONTHLY WATER LEVEL
WSF	5086	08-FEB-94	51.02	6122.94	6071.92	6024.89	
WSF	5086	07-MAR-94	51.72	6122.94	6071.22	6024.89	MONTHLY WATER LEVEL
WSF	5086	04-APR-94	51.45	6122.94	6071.49	6024.89	QUARTERLY WATER LEVEL
WSF	5086	19-APR-94	52.11	6122.94	6070.83	6024.89	
WSF	5086	02-MAY-94	51.98	6122.94	6070.96	6024.89	MONTHLY WATER LEVEL
WSF	5086	06-JUN-94	51.90	6122.94	6071.04	6024.89	MONTHLY WATER LEVEL
WSF	5086	07-JUL-94	52.00	6122.94	6070.94	6024.89	QUARTERLY WATER LEVEL
WSF	5086	29-JUL-94	51.88	6122.94	6071.06	6024.89	
WSF	5086	03-AUG-94	51.98	6122.94	6070.96	6024.89	MONTHLY WATER LEVEL
WSF	5086	03-OCT-94	51.89	6122.94	6071.05	6024.89	QUARTERLY WATER LEVEL
WSF	5086	10-OCT-94	52.07	6122.94	6070.87	6024.89	
WSF	5086	02-NOV-94	51.75	6122.94	6071.19	6024.89	MONTHLY WATER LEVEL
WSF	50894	01-SEP-94	25.47	6113.37	6087.90	6086.40	MONTHLY WATER LEVEL
WSF	50894	30-AUG-94	18.80	6113.37	6094.57	6086.40	
WSF	50894	03-OCT-94	11.57	6113.37	6101.80	6086.40	QUARTERLY WATER LEVEL
WSF	50894	01-NOV-94	12.12	6113.37	6101.25	6086.40	MONTHLY WATER LEVEL
WSF	50994	01-SEP-94	17.72	6109.71	6091.99	6084.60	MONTHLY WATER LEVEL
WSF	50994	30-AUG-94	14.95	6109.71	6094.76	6084.60	
WSF	50994	03-OCT-94	15.13	6109.71	6094.58	6084.60	QUARTERLY WATER LEVEL
WSF	50994	01-NOV-94	15.46	6109.71	6094.25	6084.60	MONTHLY WATER LEVEL
WSF	51094	02-SEP-94	44.71	6093.25	6048.54	6033.50	
WSF	51094	01-SEP-94	44.69	6093.25	6048.56	6033.50	MONTHLY WATER LEVEL
WSF	51094	30-AUG-94	44.69	6093.25	6048.56	6033.50	
WSF	51094	04-OCT-94	45.10	6093.25	6048.15	6033.50	QUARTERLY WATER LEVEL
WSF	51094	01-NOV-94	44.72	6093.25	6048.53	6033.50	MONTHLY WATER LEVEL
WSF	51194	06-SEP-94	53.48	6073.31	6019.83	6021.40	MONTHLY WATER LEVEL
WSF	51194	19-SEP-94	48.97	6073.31	6024.34	6021.40	

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
WSF	51194	03-OCT-94	47.19	6073.31	6026.12	6021.40	QUARTERLY WATER LEVEL
WSF	51194	02-NOV-94	41.33	6073.31	6031.98	6021.40	MONTHLY WATER LEVEL
WSF	51294	31-AUG-94	22.98	6064.68	6041.70	6027.80	
WSF	51294	06-SEP-94	23.13	6064.68	6041.55	6027.80	MONTHLY WATER LEVEL
WSF	51294	03-OCT-94	23.31	6064.68	6041.37	6027.80	QUARTERLY WATER LEVEL
WSF	51294	01-NOV-94	23.36	6064.68	6041.32	6027.80	MONTHLY WATER LEVEL
WSF	51494	03-AUG-94	51.40	6099.26	6047.86	6028.70	MONTHLY WATER LEVEL
WSF	51494	01-SEP-94	51.48	6099.26	6047.78	6028.70	MONTHLY WATER LEVEL
WSF	51494	29-AUG-94	51.33	6099.26	6047.93	6028.70	
WSF	51494	06-SEP-94	51.63	6099.26	6047.63	6028.70	
WSF	51494	04-OCT-94	51.79	6099.26	6047.47	6028.70	QUARTERLY WATER LEVEL
WSF	51494	01-NOV-94	51.38	6099.26	6047.88	6028.70	MONTHLY WATER LEVEL
WSF	51594	01-SEP-94	23.09	6099.49	6076.40	6077.50	MONTHLY WATER LEVEL
WSF	51594	19-SEP-94	19.78	6099.49	6079.71	6077.50	
WSF	51594	04-OCT-94	18.88	6099.49	6080.61	6077.50	QUARTERLY WATER LEVEL
WSF	51594	01-NOV-94	14.30	6099.49	6085.19	6077.50	MONTHLY WATER LEVEL
WSF	51694	29-SEP-94	59.46	6094.61	6035.15	6032.50	
WSF	51694	03-OCT-94	60.62	6094.61	6033.99	6032.50	QUARTERLY WATER LEVEL
WSF	5186	03-JAN-94	66.99	6144.25	6077.26	6063.31	QUARTERLY WATER LEVEL
WSF	5186	24-JAN-94	66.86	6144.25	6077.39	6063.31	
WSF	5186	01-FEB-94	67.15	6144.25	6077.10	6063.31	MONTHLY WATER LEVEL
WSF	5186	07-MAR-94	88.86	6144.25	6055.39	6063.31	MONTHLY WATER LEVEL
WSF	5186	07-APR-94	63.10	6144.25	6081.15	6063.31	
WSF	5186	04-APR-94	63.57	6144.25	6080.68	6063.31	QUARTERLY WATER LEVEL
WSF	5186	02-MAY-94	62.00	6144.25	6082.25	6063.31	MONTHLY WATER LEVEL
WSF	5186	06-JUN-94	62.18	6144.25	6082.07	6063.31	MONTHLY WATER LEVEL
WSF	5186	07-JUL-94	63.59	6144.25	6080.66	6063.31	QUARTERLY WATER LEVEL
WSF	5186	03-AUG-94	63.82	6144.25	6080.43	6063.31	MONTHLY WATER LEVEL
WSF	5186	03-OCT-94	64.50	6144.25	6079.75	6063.31	QUARTERLY WATER LEVEL
WSF	5186	11-OCT-94	64.16	6144.25	6080.09	6063.31	
WSF	5186	02-NOV-94	63.19	6144.25	6081.06	6063.31	MONTHLY WATER LEVEL
WSF	5286	03-JAN-94	72.17	6144.44	6072.27	6016.34	QUARTERLY WATER LEVEL
WSF	5286	17-JAN-94	72.26	6144.44	6072.18	6016.34	
WSF	5286	04-APR-94	72.80	6144.44	6071.64	6016.34	QUARTERLY WATER LEVEL
WSF	5286	07-JUL-94	71.93	6144.44	6072.51	6016.34	QUARTERLY WATER LEVEL
WSF	5286	31-AUG-94	72.05	6144.44	6072.39	6016.34	
WSF	5286	03-OCT-94	72.16	6144.44	6072.28	6016.34	QUARTERLY WATER LEVEL
WSF	5686	06-JAN-94	7.04	5988.93	5981.89	5977.86	QUARTERLY WATER LEVEL
WSF	5686	25-FEB-94	6.53	5988.93	5982.40	5977.86	
WSF	5686	04-APR-94	5.92	5988.93	5983.01	5977.86	QUARTERLY WATER LEVEL
WSF	5686	17-MAY-94	6.25	5988.93	5982.68	5977.86	
WSF	5686	05-JUL-94	9.26	5988.93	5979.67	5977.86	QUARTERLY WATER LEVEL

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
WSF	5686	17-AUG-94	6.41	5988.93	5982.52	5977.86	
WSF	5686	03-OCT-94	10.42	5988.93	5978.51	5977.86	QUARTERLY WATER LEVEL
WSF	5686	25-OCT-94	6.81	5988.93	5982.12	5977.86	
WSF	B110889	03-JAN-94	37.39	6077.77	6040.38	6010.82	QUARTERLY WATER LEVEL
WSF	B110889	24-JAN-94	37.66	6077.77	6040.11	6010.82	
WSF	B110889	04-APR-94	37.75	6077.77	6040.02	6010.82	QUARTERLY WATER LEVEL
WSF	B110889	15-APR-94	38.07	6077.77	6039.70	6010.82	
WSF	B110889	07-JUL-94	35.95	6077.77	6041.82	6010.82	QUARTERLY WATER LEVEL
WSF	B110889	05-AUG-94	36.32	6077.77	6041.45	6010.82	
WSF	B110889	03-OCT-94	36.77	6077.77	6041.00	6010.82	QUARTERLY WATER LEVEL
WSF	B110889	17-OCT-94	36.79	6077.77	6040.98	6010.82	
WSF	B110989	03-JAN-94	49.31	6084.36	6035.05	6016.69	QUARTERLY WATER LEVEL
WSF	B110989	25-JAN-94	49.48	6084.36	6034.88	6016.69	
WSF	B110989	01-FEB-94	49.81	6084.36	6034.55	6016.69	MONTHLY WATER LEVEL
WSF	B110989	07-MAR-94	50.20	6084.36	6034.16	6016.69	MONTHLY WATER LEVEL
WSF	B110989	04-APR-94	49.72	6084.36	6034.64	6016.69	QUARTERLY WATER LEVEL
WSF	B110989	15-APR-94	50.12	6084.36	6034.24	6016.69	
WSF	B110989	02-MAY-94	49.60	6084.36	6034.76	6016.69	MONTHLY WATER LEVEL
WSF	B110989	06-JUN-94	48.18	6084.36	6036.18	6016.69	MONTHLY WATER LEVEL
WSF	B110989	07-JUL-94	48.10	6084.36	6036.26	6016.69	QUARTERLY WATER LEVEL
WSF	B110989	03-AUG-94	48.31	6084.36	6036.05	6016.69	MONTHLY WATER LEVEL
WSF	B110989	01-SEP-94	48.55	6084.36	6035.81	6016.69	MONTHLY WATER LEVEL
WSF	B110989	04-OCT-94	48.95	6084.36	6035.41	6016.69	QUARTERLY WATER LEVEL
WSF	B110989	12-OCT-94	48.80	6084.36	6035.56	6016.69	
WSF	B110989	01-NOV-94	48.59	6084.36	6035.77	6016.69	MONTHLY WATER LEVEL
WSF	B111189	25-JAN-94	58.03	6107.52	6049.49	6033.12	
WSF	B111189	01-FEB-94	59.22	6107.52	6048.30	6033.12	MONTHLY WATER LEVEL
WSF	B111189	07-MAR-94	58.39	6107.52	6049.13	6033.12	MONTHLY WATER LEVEL
WSF	B111189	04-APR-94	58.11	6107.52	6049.41	6033.12	QUARTERLY WATER LEVEL
WSF	B111189	12-APR-94	58.48	6107.52	6049.04	6033.12	
WSF	B111189	02-MAY-94	58.50	6107.52	6049.02	6033.12	MONTHLY WATER LEVEL
WSF	B111189	06-JUN-94	58.46	6107.52	6049.06	6033.12	MONTHLY WATER LEVEL
WSF	B111189	07-JUL-94	58.58	6107.52	6048.94	6033.12	QUARTERLY WATER LEVEL
WSF	B111189	29-JUL-94	58.43	6107.52	6049.09	6033.12	
WSF	B111189	04-AUG-94	58.66	6107.52	6048.86	6033.12	MONTHLY WATER LEVEL
WSF	B111189	01-SEP-94	58.43	6107.52	6049.09	6033.12	MONTHLY WATER LEVEL
WSF	B111189	03-OCT-94	58.29	6107.52	6049.23	6033.12	QUARTERLY WATER LEVEL
WSF	B111189	11-OCT-94	58.25	6107.52	6049.27	6033.12	
WSF	B111189	01-NOV-94	57.92	6107.52	6049.60	6033.12	MONTHLY WATER LEVEL
WSF	B402689	06-JAN-94	4.75	6047.07	6042.32	6042.12	QUARTERLY WATER LEVEL
WSF	B402689	04-APR-94	4.00	6047.07	6043.07	6042.12	QUARTERLY WATER LEVEL
WSF	B402689	05-JUL-94	6.97	6047.07	6040.10	6042.12	QUARTERLY WATER LEVEL

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
WSF	B402689	05-OCT-94	6.08	6047.07	6040.99	6042.12	QUARTERLY WATER LEVEL
WSF	B410589	04-APR-94	54.22	6113.80	6059.58	6051.76	QUARTERLY WATER LEVEL
WSF	B410589	14-APR-94	54.36	6113.80	6059.44	6051.76	
WSF	B410589	07-JUL-94	53.93	6113.80	6059.87	6051.76	QUARTERLY WATER LEVEL
WSF	B410589	05-AUG-94	53.90	6113.80	6059.90	6051.76	
WSF	B410589	05-OCT-94	53.82	6113.80	6059.98	6051.76	QUARTERLY WATER LEVEL
WSF	B410589	11-OCT-94	54.11	6113.80	6059.69	6051.76	
WSF	B410689	03-JAN-94	44.61	6093.71	6049.10	6041.65	QUARTERLY WATER LEVEL
WSF	B410689	25-JAN-94	44.79	6093.71	6048.92	6041.65	
WSF	B410689	07-FEB-94	44.82	6093.71	6048.89	6041.65	MONTHLY WATER LEVEL
WSF	B410689	07-MAR-94	47.50	6093.71	6046.21	6041.65	MONTHLY WATER LEVEL
WSF	B410689	04-APR-94	45.07	6093.71	6048.64	6041.65	QUARTERLY WATER LEVEL
WSF	B410689	15-APR-94	45.51	6093.71	6048.20	6041.65	
WSF	B410689	02-MAY-94	44.93	6093.71	6048.78	6041.65	MONTHLY WATER LEVEL
WSF	B410689	06-JUN-94	43.75	6093.71	6049.96	6041.65	MONTHLY WATER LEVEL
WSF	B410689	07-JUL-94	43.83	6093.71	6049.88	6041.65	QUARTERLY WATER LEVEL
WSF	B410689	04-AUG-94	44.06	6093.71	6049.65	6041.65	MONTHLY WATER LEVEL
WSF	B410689	09-AUG-94	43.98	6093.71	6049.73	6041.65	
WSF	B410689	01-SEP-94	44.15	6093.71	6049.56	6041.65	MONTHLY WATER LEVEL
WSF	B410689	04-OCT-94	44.57	6093.71	6049.14	6041.65	QUARTERLY WATER LEVEL
WSF	B410689	10-OCT-94	44.44	6093.71	6049.27	6041.65	
WSF	B410689	01-NOV-94	44.21	6093.71	6049.50	6041.65	MONTHLY WATER LEVEL
WSF	B410789	03-JAN-94	38.71	6083.66	6044.95	6037.07	QUARTERLY WATER LEVEL
WSF	B410789	01-FEB-94	39.28	6083.66	6044.38	6037.07	MONTHLY WATER LEVEL
WSF	B410789	11-FEB-94	38.98	6083.66	6044.68	6037.07	
WSF	B410789	10-MAR-94	39.62	6083.66	6044.04	6037.07	
WSF	B410789	07-MAR-94	39.73	6083.66	6043.93	6037.07	MONTHLY WATER LEVEL
WSF	B410789	04-APR-94	39.08	6083.66	6044.58	6037.07	QUARTERLY WATER LEVEL
WSF	B410789	19-APR-94	39.34	6083.66	6044.32	6037.07	
WSF	B410789	02-MAY-94	38.75	6083.66	6044.91	6037.07	MONTHLY WATER LEVEL
WSF	B410789	06-JUN-94	37.42	6083.66	6046.24	6037.07	MONTHLY WATER LEVEL
WSF	B410789	07-JUL-94	37.53	6083.66	6046.13	6037.07	QUARTERLY WATER LEVEL
WSF	B410789	04-AUG-94	37.93	6083.66	6045.73	6037.07	MONTHLY WATER LEVEL
WSF	B410789	09-AUG-94	37.81	6083.66	6045.85	6037.07	
WSF	B410789	01-SEP-94	38.03	6083.66	6045.63	6037.07	MONTHLY WATER LEVEL
WSF	B410789	04-OCT-94	38.48	6083.66	6045.18	6037.07	QUARTERLY WATER LEVEL
WSF	B410789	10-OCT-94	38.34	6083.66	6045.32	6037.07	
WSF	B410789	01-NOV-94	38.13	6083.66	6045.53	6037.07	MONTHLY WATER LEVEL
WSF	B411289	03-JAN-94	61.92	6127.30	6065.38	6057.01	QUARTERLY WATER LEVEL
WSF	B411289	15-FEB-94	62.33	6127.30	6064.97	6057.01	
WSF	B411289	04-APR-94	62.11	6127.30	6065.19	6057.01	QUARTERLY WATER LEVEL
WSF	B411289	20-APR-94	62.89	6127.30	6064.41	6057.01	

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
WSF	B411289	07-JUL-94	62.75	6127.30	6064.55	6057.01	QUARTERLY WATER LEVEL
WSF	B411289	09-AUG-94	62.72	6127.30	6064.58	6057.01	
WSF	B411289	03-OCT-94	62.44	6127.30	6064.86	6057.01	QUARTERLY WATER LEVEL
WSF	B411289	17-OCT-94	62.31	6127.30	6064.99	6057.01	
WSF	B411389	05-JAN-94	54.35	6111.06	6056.71	6045.98	QUARTERLY WATER LEVEL
WSF	B411389	24-JAN-94	54.76	6111.06	6056.30	6045.98	
WSF	B411389	01-FEB-94	55.03	6111.06	6056.03	6045.98	MONTHLY WATER LEVEL
WSF	B411389	07-MAR-94	55.41	6111.06	6055.65	6045.98	MONTHLY WATER LEVEL
WSF	B411389	04-APR-94	55.09	6111.06	6055.97	6045.98	QUARTERLY WATER LEVEL
WSF	B411389	14-APR-94	55.14	6111.06	6055.92	6045.98	
WSF	B411389	02-MAY-94	55.42	6111.06	6055.64	6045.98	MONTHLY WATER LEVEL
WSF	B411389	06-JUN-94	55.03	6111.06	6056.03	6045.98	MONTHLY WATER LEVEL
WSF	B411389	07-JUL-94	54.96	6111.06	6056.10	6045.98	QUARTERLY WATER LEVEL
WSF	B411389	03-AUG-94	54.92	6111.06	6056.14	6045.98	MONTHLY WATER LEVEL
WSF	B411389	12-AUG-94	54.90	6111.06	6056.16	6045.98	
WSF	B411389	02-SEP-94	54.84	6111.06	6056.22	6045.98	MONTHLY WATER LEVEL
WSF	B411389	03-OCT-94	54.80	6111.06	6056.26	6045.98	QUARTERLY WATER LEVEL
WSF	B411389	11-OCT-94	54.89	6111.06	6056.17	6045.98	
WSF	B411389	02-NOV-94	54.66	6111.06	6056.40	6045.98	MONTHLY WATER LEVEL
WSF	P114389	11-JAN-94	8.20	5993.17	5984.97	5976.70	QUARTERLY WATER LEVEL
WSF	P114389	02-FEB-94	8.26	5993.17	5984.91	5976.70	MONTHLY WATER LEVEL
WSF	P114389	07-FEB-94	8.25	5993.17	5984.92	5976.70	
WSF	P114389	01-MAR-94	8.10	5993.17	5985.07	5976.70	MONTHLY WATER LEVEL
WSF	P114389	05-APR-94	7.46	5993.17	5985.71	5976.70	QUARTERLY WATER LEVEL
WSF	P114389	26-APR-94	7.16	5993.17	5986.01	5976.70	
WSF	P114389	03-MAY-94	7.41	5993.17	5985.76	5976.70	MONTHLY WATER LEVEL
WSF	P114389	01-JUN-94	7.51	5993.17	5985.66	5976.70	MONTHLY WATER LEVEL
WSF	P114389	01-JUL-94	8.34	5993.17	5984.83	5976.70	QUARTERLY WATER LEVEL
WSF	P114389	01-AUG-94	8.13	5993.17	5985.04	5976.70	MONTHLY WATER LEVEL
WSF	P114389	15-AUG-94	8.12	5993.17	5985.05	5976.70	
WSF	P114389	02-SEP-94	8.55	5993.17	5984.62	5976.70	MONTHLY WATER LEVEL
WSF	P114389	07-OCT-94	8.31	5993.17	5984.86	5976.70	QUARTERLY WATER LEVEL
WSF	P114389	03-NOV-94	7.48	5993.17	5985.69	5976.70	
WSF	P114389	02-NOV-94	8.43	5993.17	5984.74	5976.70	MONTHLY WATER LEVEL
WSF	P114489	04-JAN-94	15.89	6035.43	6019.54	5984.60	QUARTERLY WATER LEVEL/<.3FT NOT SAMPLED
WSF	P114489	02-FEB-94	16.40	6035.43	6019.03	5984.60	MONTHLY WATER LEVEL
WSF	P114489	14-FEB-94	16.58	6035.43	6018.85	5984.60	
WSF	P114489	01-MAR-94	16.27	6035.43	6019.16	5984.60	MONTHLY WATER LEVEL
WSF	P114489	05-APR-94	14.49	6035.43	6020.94	5984.60	QUARTERLY WATER LEVEL
WSF	P114489	26-APR-94	12.53	6035.43	6022.90	5984.60	
WSF	P114489	03-MAY-94	11.46	6035.43	6023.97	5984.60	MONTHLY WATER LEVEL
WSF	P114489	01-JUN-94	11.94	6035.43	6023.49	5984.60	MONTHLY WATER LEVEL

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
WSF	P114489	01-JUL-94	13.12	6035.43	6022.31	5984.60	QUARTERLY WATER LEVEL
WSF	P114489	01-AUG-94	14.52	6035.43	6020.91	5984.60	MONTHLY WATER LEVEL
WSF	P114489	15-AUG-94	15.00	6035.43	6020.43	5984.60	
WSF	P114489	02-SEP-94	15.43	6035.43	6020.00	5984.60	MONTHLY WATER LEVEL
WSF	P114489	07-OCT-94	15.97	6035.43	6019.46	5984.60	QUARTERLY WATER LEVEL
WSF	P114489	02-NOV-94	16.04	6035.43	6019.39	5984.60	MONTHLY WATER LEVEL
WSF	P114489	09-NOV-94	16.28	6035.43	6019.15	5984.60	
WSF	P114589	05-JAN-94	37.49	6025.90	5988.41	5987.60	QUARTERLY WATER LEVEL
WSF	P114589	02-FEB-94	37.05	6025.90	5988.85	5987.60	MONTHLY WATER LEVEL
WSF	P114589	14-FEB-94	36.89	6025.90	5989.01	5987.60	
WSF	P114589	01-MAR-94	38.59	6025.90	5987.31	5987.60	MONTHLY WATER LEVEL
WSF	P114589	05-APR-94	37.94	6025.90	5987.96	5987.60	QUARTERLY WATER LEVEL
WSF	P114589	26-APR-94	4.52	6025.90	6021.38	5987.60	
WSF	P114589	03-MAY-94	3.41	6025.90	6022.49	5987.60	MONTHLY WATER LEVEL
WSF	P114589	01-JUN-94	5.16	6025.90	6020.74	5987.60	MONTHLY WATER LEVEL
WSF	P114589	01-JUL-94	6.04	6025.90	6019.86	5987.60	QUARTERLY WATER LEVEL
WSF	P114589	01-AUG-94	6.89	6025.90	6019.01	5987.60	MONTHLY WATER LEVEL
WSF	P114589	15-AUG-94	7.20	6025.90	6018.70	5987.60	
WSF	P114589	02-SEP-94	38.14	6025.90	5987.76	5987.60	MONTHLY WATER LEVEL
WSF	P114589	05-OCT-94	37.61	6025.90	5988.29	5987.60	QUARTERLY WATER LEVEL
WSF	P114589	03-NOV-94	37.14	6025.90	5988.76	5987.60	
WSF	P114589	02-NOV-94	37.13	6025.90	5988.77	5987.60	MONTHLY WATER LEVEL
WSF	P114989	05-JAN-94	13.99	6031.84	6017.85	5991.80	QUARTERLY WATER LEVEL
WSF	P114989	02-FEB-94	14.85	6031.84	6016.99	5991.80	MONTHLY WATER LEVEL
WSF	P114989	07-FEB-94	15.00	6031.84	6016.84	5991.80	
WSF	P114989	01-MAR-94	15.56	6031.84	6016.28	5991.80	MONTHLY WATER LEVEL
WSF	P114989	05-APR-94	14.77	6031.84	6017.07	5991.80	QUARTERLY WATER LEVEL
WSF	P114989	25-APR-94	14.35	6031.84	6017.49	5991.80	
WSF	P114989	03-MAY-94	17.53	6031.84	6014.31	5991.80	MONTHLY WATER LEVEL
WSF	P114989	19-MAY-94	28.11	6031.84	6003.73	5991.80	
WSF	P114989	01-JUN-94	15.95	6031.84	6015.89	5991.80	MONTHLY WATER LEVEL
WSF	P114989	14-JUL-94	13.71	6031.84	6018.13	5991.80	QUARTERLY WATER LEVEL
WSF	P114989	01-AUG-94	14.55	6031.84	6017.29	5991.80	MONTHLY WATER LEVEL
WSF	P114989	15-AUG-94	13.40	6031.84	6018.44	5991.80	
WSF	P114989	02-SEP-94	13.89	6031.84	6017.95	5991.80	MONTHLY WATER LEVEL
WSF	P114989	12-SEP-94	13.34	6031.84	6018.50	5991.80	
WSF	P114989	05-OCT-94	13.57	6031.84	6018.27	5991.80	QUARTERLY WATER LEVEL
WSF	P114989	03-NOV-94	13.06	6031.84	6018.78	5991.80	
WSF	P114989	02-NOV-94	13.14	6031.84	6018.70	5991.80	MONTHLY WATER LEVEL
WSF	P115089	05-JAN-94	16.96	6040.10	6023.14	5997.40	QUARTERLY WATER LEVEL
WSF	P115089	02-FEB-94	17.85	6040.10	6022.25	5997.40	MONTHLY WATER LEVEL
WSF	P115089	09-FEB-94	17.97	6040.10	6022.13	5997.40	

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
WSF	P115089	01-MAR-94	17.53	6040.10	6022.57	5997.40	MONTHLY WATER LEVEL
WSF	P115089	05-APR-94	15.57	6040.10	6024.53	5997.40	QUARTERLY WATER LEVEL
WSF	P115089	29-APR-94	13.61	6040.10	6026.49	5997.40	
WSF	P115089	03-MAY-94	12.75	6040.10	6027.35	5997.40	MONTHLY WATER LEVEL
WSF	P115089	01-JUN-94	13.08	6040.10	6027.02	5997.40	MONTHLY WATER LEVEL
WSF	P115089	01-JUL-94	14.29	6040.10	6025.81	5997.40	QUARTERLY WATER LEVEL
WSF	P115089	01-AUG-94	15.78	6040.10	6024.32	5997.40	MONTHLY WATER LEVEL
WSF	P115089	15-AUG-94	16.30	6040.10	6023.80	5997.40	
WSF	P115089	02-SEP-94	16.71	6040.10	6023.39	5997.40	MONTHLY WATER LEVEL
WSF	P115089	05-OCT-94	17.06	6040.10	6023.04	5997.40	QUARTERLY WATER LEVEL
WSF	P115089	02-NOV-94	17.51	6040.10	6022.59	5997.40	MONTHLY WATER LEVEL
WSF	P115089	08-NOV-94	17.74	6040.10	6022.36	5997.40	
WSF	P415889	04-JAN-94	17.31	6052.60	6035.29	6007.20	QUARTERLY WATER LEVEL
WSF	P415889	02-FEB-94	19.40	6052.60	6033.20	6007.20	MONTHLY WATER LEVEL
WSF	P415889	14-FEB-94	19.61	6052.60	6032.99	6007.20	
WSF	P415889	01-MAR-94	18.14	6052.60	6034.46	6007.20	MONTHLY WATER LEVEL
WSF	P415889	05-APR-94	14.34	6052.60	6038.26	6007.20	QUARTERLY WATER LEVEL
WSF	P415889	26-APR-94	12.77	6052.60	6039.83	6007.20	
WSF	P415889	03-MAY-94	11.90	6052.60	6040.70	6007.20	MONTHLY WATER LEVEL
WSF	P415889	01-JUN-94	12.82	6052.60	6039.78	6007.20	MONTHLY WATER LEVEL
WSF	P415889	01-JUL-94	14.70	6052.60	6037.90	6007.20	QUARTERLY WATER LEVEL
WSF	P415889	01-AUG-94	16.89	6052.60	6035.71	6007.20	MONTHLY WATER LEVEL
WSF	P415889	15-AUG-94	17.44	6052.60	6035.16	6007.20	
WSF	P415889	02-SEP-94	17.70	6052.60	6034.90	6007.20	MONTHLY WATER LEVEL
WSF	P415889	05-OCT-94	18.30	6052.60	6034.30	6007.20	QUARTERLY WATER LEVEL
WSF	P415889	02-NOV-94	19.33	6052.60	6033.27	6007.20	MONTHLY WATER LEVEL
WSF	P415889	07-NOV-94	19.51	6052.60	6033.09	6007.20	
WSF	P415989	04-JAN-94	9.27	6046.71	6037.44	6018.17	QUARTERLY WATER LEVEL
WSF	P415989	02-FEB-94	11.67	6046.71	6035.04	6018.17	MONTHLY WATER LEVEL
WSF	P415989	10-FEB-94	11.95	6046.71	6034.76	6018.17	
WSF	P415989	01-MAR-94	9.73	6046.71	6036.98	6018.17	MONTHLY WATER LEVEL
WSF	P415989	05-APR-94	5.77	6046.71	6040.94	6018.17	QUARTERLY WATER LEVEL
WSF	P415989	29-APR-94	4.28	6046.71	6042.43	6018.17	
WSF	P415989	03-MAY-94	3.71	6046.71	6043.00	6018.17	MONTHLY WATER LEVEL
WSF	P415989	01-JUN-94	5.35	6046.71	6041.36	6018.17	MONTHLY WATER LEVEL
WSF	P415989	01-JUL-94	7.30	6046.71	6039.41	6018.17	QUARTERLY WATER LEVEL
WSF	P415989	01-AUG-94	9.49	6046.71	6037.22	6018.17	MONTHLY WATER LEVEL
WSF	P415989	16-AUG-94	9.88	6046.71	6036.83	6018.17	
WSF	P415989	02-SEP-94	10.21	6046.71	6036.50	6018.17	MONTHLY WATER LEVEL
WSF	P415989	05-OCT-94	10.78	6046.71	6035.93	6018.17	QUARTERLY WATER LEVEL
WSF	P415989	04-NOV-94	12.19	6046.71	6034.52	6018.17	
WSF	P415989	02-NOV-94	11.98	6046.71	6034.73	6018.17	MONTHLY WATER LEVEL

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
WSF	P416089	04-JAN-94	11.63	6053.95	6042.32	6017.70	QUARTERLY WATER LEVEL
WSF	P416089	02-FEB-94	15.06	6053.95	6038.89	6017.70	MONTHLY WATER LEVEL
WSF	P416089	15-FEB-94	14.87	6053.95	6039.08	6017.70	
WSF	P416089	01-MAR-94	11.37	6053.95	6042.58	6017.70	MONTHLY WATER LEVEL
WSF	P416089	05-APR-94	5.48	6053.95	6048.47	6017.70	QUARTERLY WATER LEVEL
WSF	P416089	27-APR-94	4.57	6053.95	6049.38	6017.70	
WSF	P416089	03-MAY-94	4.11	6053.95	6049.84	6017.70	MONTHLY WATER LEVEL
WSF	P416089	01-JUN-94	6.06	6053.95	6047.89	6017.70	MONTHLY WATER LEVEL
WSF	P416089	01-JUL-94	9.89	6053.95	6044.06	6017.70	QUARTERLY WATER LEVEL
WSF	P416089	01-AUG-94	12.60	6053.95	6041.35	6017.70	MONTHLY WATER LEVEL
WSF	P416089	12-AUG-94	12.42	6053.95	6041.53	6017.70	
WSF	P416089	02-SEP-94	12.08	6053.95	6041.87	6017.70	MONTHLY WATER LEVEL
WSF	P416089	05-OCT-94	13.09	6053.95	6040.86	6017.70	QUARTERLY WATER LEVEL
WSF	P416089	02-NOV-94	15.47	6053.95	6038.48	6017.70	MONTHLY WATER LEVEL
WSF	P416089	07-NOV-94	14.84	6053.95	6039.11	6017.70	
WSF	P416189	04-JAN-94	11.55	6047.95	6036.40	6015.94	QUARTERLY WATER LEVEL
WSF	P416189	02-FEB-94	14.67	6047.95	6033.28	6015.94	MONTHLY WATER LEVEL
WSF	P416189	17-FEB-94	13.77	6047.95	6034.18	6015.94	
WSF	P416189	01-MAR-94	11.96	6047.95	6035.99	6015.94	MONTHLY WATER LEVEL
WSF	P416189	05-APR-94	7.78	6047.95	6040.17	6015.94	QUARTERLY WATER LEVEL
WSF	P416189	06-MAY-94	5.82	6047.95	6042.13	6015.94	
WSF	P416189	03-MAY-94	5.67	6047.95	6042.28	6015.94	MONTHLY WATER LEVEL
WSF	P416189	01-JUN-94	7.85	6047.95	6040.10	6015.94	MONTHLY WATER LEVEL
WSF	P416189	01-JUL-94	10.16	6047.95	6037.79	6015.94	QUARTERLY WATER LEVEL
WSF	P416189	01-AUG-94	12.56	6047.95	6035.39	6015.94	MONTHLY WATER LEVEL
WSF	P416189	23-AUG-94	12.99	6047.95	6034.96	6015.94	
WSF	P416189	02-SEP-94	13.18	6047.95	6034.77	6015.94	MONTHLY WATER LEVEL
WSF	P416189	05-OCT-94	13.99	6047.95	6033.96	6015.94	QUARTERLY WATER LEVEL
WSF	P416189	02-NOV-94	15.22	6047.95	6032.73	6015.94	MONTHLY WATER LEVEL
WSF	P416189	31-OCT-94	15.10	6047.95	6032.85	6015.94	
WSF	P416289	04-JAN-94	14.70	6040.22	6025.52	6015.10	QUARTERLY WATER LEVEL
WSF	P416289	03-FEB-94	15.80	6040.22	6024.42	6015.10	MONTHLY WATER LEVEL
WSF	P416289	10-FEB-94	16.20	6040.22	6024.02	6015.10	
WSF	P416289	01-MAR-94	15.70	6040.22	6024.52	6015.10	MONTHLY WATER LEVEL
WSF	P416289	05-APR-94	13.24	6040.22	6026.98	6015.10	QUARTERLY WATER LEVEL
WSF	P416289	04-MAY-94	11.61	6040.22	6028.61	6015.10	
WSF	P416289	02-MAY-94	11.71	6040.22	6028.51	6015.10	MONTHLY WATER LEVEL
WSF	P416289	01-JUN-94	12.54	6040.22	6027.68	6015.10	MONTHLY WATER LEVEL
WSF	P416289	01-JUL-94	13.74	6040.22	6026.48	6015.10	QUARTERLY WATER LEVEL
WSF	P416289	01-AUG-94	14.42	6040.22	6025.80	6015.10	MONTHLY WATER LEVEL
WSF	P416289	16-AUG-94	14.97	6040.22	6025.25	6015.10	
WSF	P416289	02-SEP-94	15.35	6040.22	6024.87	6015.10	MONTHLY WATER LEVEL

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
WSF	P416289	07-OCT-94	15.68	6040.22	6024.54	6015.10	QUARTERLY WATER LEVEL
WSF	P416289	02-NOV-94	16.13	6040.22	6024.09	6015.10	MONTHLY WATER LEVEL
WSF	P416289	07-NOV-94	16.44	6040.22	6023.78	6015.10	
WSF	P416389	04-JAN-94	16.55	6057.14	6040.59	6025.30	QUARTERLY WATER LEVEL
WSF	P416389	03-FEB-94	19.52	6057.14	6037.62	6025.30	MONTHLY WATER LEVEL
WSF	P416389	10-FEB-94	19.67	6057.14	6037.47	6025.30	
WSF	P416389	01-MAR-94	16.44	6057.14	6040.70	6025.30	MONTHLY WATER LEVEL
WSF	P416389	05-APR-94	9.72	6057.14	6047.42	6025.30	QUARTERLY WATER LEVEL
WSF	P416389	03-MAY-94	6.20	6057.14	6050.94	6025.30	MONTHLY WATER LEVEL
WSF	P416389	02-MAY-94	6.37	6057.14	6050.77	6025.30	
WSF	P416389	01-JUN-94	10.23	6057.14	6046.91	6025.30	MONTHLY WATER LEVEL
WSF	P416389	01-JUL-94	14.71	6057.14	6042.43	6025.30	QUARTERLY WATER LEVEL
WSF	P416389	01-AUG-94	17.55	6057.14	6039.59	6025.30	MONTHLY WATER LEVEL
WSF	P416389	17-AUG-94	18.28	6057.14	6038.86	6025.30	
WSF	P416389	02-SEP-94	18.40	6057.14	6038.74	6025.30	MONTHLY WATER LEVEL
WSF	P416389	05-OCT-94	19.30	6057.14	6037.84	6025.30	QUARTERLY WATER LEVEL
WSF	P416389	03-NOV-94	20.53	6057.14	6036.61	6025.30	
WSF	P416389	02-NOV-94	20.40	6057.14	6036.74	6025.30	MONTHLY WATER LEVEL
WSF	P416489	04-JAN-94	19.16	6050.15	6030.99	6022.80	QUARTERLY WATER LEVEL
WSF	P416489	03-FEB-94	21.70	6050.15	6028.45	6022.80	MONTHLY WATER LEVEL
WSF	P416489	10-FEB-94	21.95	6050.15	6028.20	6022.80	
WSF	P416489	01-MAR-94	19.74	6050.15	6030.41	6022.80	MONTHLY WATER LEVEL
WSF	P416489	05-APR-94	15.21	6050.15	6034.94	6022.80	QUARTERLY WATER LEVEL
WSF	P416489	26-APR-94	13.19	6050.15	6036.96	6022.80	
WSF	P416489	03-MAY-94	11.12	6050.15	6039.03	6022.80	MONTHLY WATER LEVEL
WSF	P416489	01-JUN-94	14.45	6050.15	6035.70	6022.80	MONTHLY WATER LEVEL
WSF	P416489	01-JUL-94	17.86	6050.15	6032.29	6022.80	QUARTERLY WATER LEVEL
WSF	P416489	01-AUG-94	19.90	6050.15	6030.25	6022.80	MONTHLY WATER LEVEL
WSF	P416489	16-AUG-94	20.46	6050.15	6029.69	6022.80	
WSF	P416489	02-SEP-94	20.81	6050.15	6029.34	6022.80	MONTHLY WATER LEVEL
WSF	P416489	07-OCT-94	21.50	6050.15	6028.65	6022.80	QUARTERLY WATER LEVEL
WSF	P416489	02-NOV-94	22.14	6050.15	6028.01	6022.80	MONTHLY WATER LEVEL
WSF	P416489	08-NOV-94	22.27	6050.15	6027.88	6022.80	
WSF	P416589	04-JAN-94	27.59	6042.81	6015.22	6010.20	QUARTERLY WATER LEVEL
WSF	P416589	03-FEB-94	28.74	6042.81	6014.07	6010.20	MONTHLY WATER LEVEL
WSF	P416589	14-FEB-94	29.10	6042.81	6013.71	6010.20	
WSF	P416589	01-MAR-94	29.21	6042.81	6013.60	6010.20	MONTHLY WATER LEVEL
WSF	P416589	05-APR-94	27.34	6042.81	6015.47	6010.20	QUARTERLY WATER LEVEL
WSF	P416589	06-MAY-94	24.94	6042.81	6017.87	6010.20	
WSF	P416589	02-MAY-94	25.37	6042.81	6017.44	6010.20	MONTHLY WATER LEVEL
WSF	P416589	01-JUN-94	25.64	6042.81	6017.17	6010.20	MONTHLY WATER LEVEL
WSF	P416589	01-JUL-94	26.84	6042.81	6015.97	6010.20	QUARTERLY WATER LEVEL

Appendix A
1994 Groundwater Potentiometric Heads
(in Feet Above Mean Sea Level)

Unit	Well ID	Sampling Date	Water Depth	Top of Casing	Hydraulic Head	Bottom of Screen	COMMENTS
WSF	P416589	01-AUG-94	27.57	6042.81	6015.24	6010.20	MONTHLY WATER LEVEL
WSF	P416589	18-AUG-94	27.94	6042.81	6014.87	6010.20	
WSF	P416589	02-SEP-94	28.12	6042.81	6014.69	6010.20	MONTHLY WATER LEVEL
WSF	P416589	07-OCT-94	28.42	6042.81	6014.39	6010.20	QUARTERLY WATER LEVEL
WSF	P416589	02-NOV-94	28.73	6042.81	6014.08	6010.20	MONTHLY WATER LEVEL
WSF	P416589	07-NOV-94	28.93	6042.81	6013.88	6010.20	
WSF	P416989	04-JAN-94	40.63	6047.55	6006.92	5889.59	QUARTERLY WATER LEVEL
WSF	P416989	21-FEB-94	40.20	6047.55	6007.35	5889.59	
WSF	P416989	05-APR-94	40.92	6047.55	6006.63	5889.59	QUARTERLY WATER LEVEL
WSF	P416989	03-MAY-94	40.53	6047.55	6007.02	5889.59	
WSF	P416989	01-JUL-94	41.06	6047.55	6006.49	5889.59	QUARTERLY WATER LEVEL
WSF	P416989	16-AUG-94	40.70	6047.55	6006.85	5889.59	
WSF	P416989	05-OCT-94	41.20	6047.55	6006.35	5889.59	QUARTERLY WATER LEVEL
WSF	P416989	31-OCT-94	40.95	6047.55	6006.60	5889.59	

APPENDIX B

GROUNDWATER QUALITY DATA FOR 1994

APPENDIX B

Groundwater quality data for the 1994 Annual RCRA Groundwater Monitoring Report are included on a 3 1/2-inch disk. The file is located in an executable ZIP file and can be restored by typing INSTALL.BAT from the B: DOS prompt. The \APXB directory contains all "Target" analyte records. The names and contents of the files are:

Solar Evaporation Ponds

SEP94VOA.TXT	Volatile Organic Analytes
SEP94RAD.TXT	Radionuclides
SEP94MET.TXT	Metals
SEP94WAT.TXT	Inorganic Analytes

West Spray Field

WSF94VOA.TXT	Volatile Organic Analytes
WSF94RAD.TXT	Radionuclides
WSF94MET.TXT	Metals
WSF94WAT.TXT	Inorganic Analytes

Present Landfill

PLF94VOA.TXT	Volatile Organic Analytes
PLF94RAD.TXT	Radionuclides
PLF94MET.TXT	Metals
PLF94WAT.TXT	Inorganic Analytes

APPENDIX C

COMPARATIVE STATISTICS FOR UPGRADIENT VERSUS DOWNGRADIENT WELLS

APPENDIX C

Results from statistical comparisons are given in electronic format. Results of all statistical comparisons are contained in a single self extracting file named "APXC.EXE." This file must be extracted with a "-d" flag. For example, the command **apxc -d** uncompresses the files with all subdirectories restored.

An install batch file (INSTALL1.BAT) is provided to extract APXA, APXB, and APXC (Appendices A, B, and C). The batch file will automatically create three directories on the c: drive. INSTALL1.BAT must be executed from the b: prompt (if the 3.5 inch diskette is a:, then INSTALL1.BAT must be executed at a:).

APXC contains three subdirectories for each RCRA regulated unit: SEP, PLF and WSF. The subdirectory structure is as follows:

```
└─APXC──────────┬─PLF──────────┬─RADDIS────────┬─UHSU
                │              │               └─BDRK
                │              ├─METALS────────┬─UHSU
                │              │               └─BDRK
                │              ├─WAQ───────────┬─UHSU
                │              │               └─BDRK
                │              └─RADTOT────────┬─UHSU
                │                              └─BDRK
                ├─SEP──────────┬─METALS────────┬─UHSU
                │              │               └─BDRK
                │              ├─RADDIS────────┬─UHSU
                │              │               └─BDRK
                │              ├─WAQ───────────┬─UHSU
                │              │               └─BDRK
                │              └─RADTOT────────┬─UHSU
                │                              └─BDRK
                └─WSF──────────┬─RADDIS─────────UHSU
                               ├─METALS─────────UHSU
                               ├─WAQ────────────UHSU
                               └─RADTOT─────────UHSU
```

where,

METALS	=	dissolved metals
RADDIS	=	dissolved radionuclides
RADTOT	=	total radionuclides

WAQ	=	water quality parameters (inorganics)
UHSU	=	upper hydrostratigraphic unit
BDRK	=	bedrock.

The UHSU and BDRK directories contain the files for each analyte analyzed (Tables 3-6, 3-7, 4-6, 5-6, and 5-7). For instance, the file BAR_SEP.LST in the APXC\SEP\METALS\UHSU directory contains the results of all the statistical procedures defined in Figure 1-1 for barium at the Solar Evaporation Ponds (Upper Hydrostratigraphic Unit).

APPENDIX D

SUMMARY TABLES OF DATA QUALITY

APPENDIX D

Summary tables of data quality for the 1994 Annual RCRA Groundwater Monitoring Report are included on a 3 1/2-inch disk. The file is located in an executable ZIP file and can be restored by typing INSTALL.BAT from the B: DOS prompt.

Note:	Total	=	Unfiltered Analysis
	Dissolved	=	Filtered Analysis
	TRADS	=	Total Radionuclide Analysis
	DRADS	=	Dissolved Radionuclide Analysis
	SMETCLP	=	Total Metal Analysis
	METADD	=	Total Metal Analysis
	DMETCLP	=	Dissolved Metal Analysis
	DMETADD	=	Dissolved Metal Analysis

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
DMETADD	LITHIUM	02691	05/18/94	33.00	U	V					
							33.00	U	V	DUP	
		3086	10/06/94	575.38		Y					200.00 *
							579.00		Y	REAL	
		46292	03/03/94	3.90	B	V					
							3.90	B	V	DUP	
			04/21/94	33.00	U	V					
							33.00	U	V	DUP	
			08/16/94	11.00	U	Z					*
							11.00	U	V	REAL	
							11.00	U	V	DUP	
		4786	01/24/94	22.00	U	V					
							22.00	U	V	DUP	
			06/13/94	33.00	U	V					
							33.00	U	V	DUP	
		5086	02/08/94	22.00	U	V					
							22.00	U	V	DUP	
			04/19/94	33.00	U	Y					
							33.00	U	Y	DUP	
			07/28/94	7.30	B	Y					7.09
							6.80	B	Y	DUP	
			10/10/94	11.00	U	Y					
							11.00	U	Y	DUP	
		6087	02/14/94	22.00	U	V					
							22.00	U	V	DUP	
			04/14/94	4.20	B	V					-38.46
							6.20	B	V	DUP	
		6887	01/27/94	5.90	B	V					-6.56
							6.30	B	V	DUP	
			04/15/94	3.70	B	V					2.74
							3.60	B	V	DUP	
		71893	03/15/94	23.00	U	V					
							23.00	U	V	DUP	
							23.00	U	V	DUP	
		B410589	10/11/94	11.00	U	Y					200.00 *

 (* in RPD denotes multiple REAL sample results)

Relative Percent Differences

DMETADD	LITHIUM						11.00	U	Y	REAL		
		P114989	09/12/94	10.38	B	Y					200.00	*
							9.90	B	Y	REAL		
		P415889	08/15/94	11.00	U	Z					200.00	*
							11.00	U	V	REAL		
		P416189	02/17/94	6.60	U	J					-30.77	
							7.10	U	J	DUP		
							10.90	B	V	DUP		
			05/05/94	4.90	B	V					-54.81	
							5.60	B	V	DUP		
							11.60	B	V	DUP		
			08/23/94	6.10	B	V					-43.59	
							5.90	B	J	DUP		
							13.10	B	V	DUP		
	MOLYBDENUM	02691	05/18/94	26.00	U	V						
							26.00	U	V	DUP		
		3086	10/06/94	15.00	U	Y					200.00	*
							15.00	U	Y	REAL		
		46292	03/03/94	6.00	U	V					-24.82	
							7.70	B	V	DUP		
			04/21/94	26.00	U	V						
							26.00	U	V	DUP		
			08/16/94	14.00	U	Z						*
							14.00	U	V	REAL		
							14.00	U	V	DUP		
		4786	01/24/94	13.00	U	V						
							13.00	U	V	DUP		
			06/13/94	26.00	U	V						
							26.00	U	V	DUP		
		5086	02/08/94	13.00	U	V						
							13.00	U	V	DUP		
			04/19/94	26.00	U	Y						
							26.00	U	Y	DUP		
			07/28/94	3.00	U	Y						
							3.00	U	Y	DUP		
			10/10/94	15.00	U	Y						
							15.00	U	Y	DUP		
		6087	02/14/94	13.00	U	V						
							13.00	U	V	DUP		

(* in RPD denotes multiple REAL sample results)

Relative Percent Differences

DMETADD	MOLYBDENUM		04/14/94	3.00	U	V					-96.55
							8.60	U	J	DUP	
		6887	01/27/94	6.00	U	V					-37.84
							8.80	U	J	DUP	
			04/15/94	5.30	U	J					-48.57
							8.70	U	J	DUP	
		71893	03/15/94	13.00	U	V					
							13.00	U	V	DUP	
							13.00	U	V	DUP	
		B410589	10/11/94	15.00	U	Y					200.00*
							15.00	U	Y	REAL	
		P114989	09/12/94	3.00	U	Y					200.00*
							3.80	B	Y	REAL	
		P415889	08/15/94	14.00	U	Z					200.00*
							14.00	U	V	REAL	
		P416189	02/17/94	6.00	U	V					-68.49
							11.30	U	J	DUP	
							13.20	U	J	DUP	
			05/05/94	3.00	U	V					
							3.00	U	V	DUP	
							3.00	U	V	DUP	
			08/23/94	3.00	U	V					
							3.00	U	V	DUP	
							3.00	U	V	DUP	
	SILICON	02691	05/18/94	8150.00		V					-1.46
							8270.00		V	DUP	
		3086	10/06/94	7370.00		Y					200.00*
							7180.00		Y	REAL	
		46292	03/03/94	12500.00		V					0.80
							12400.00		V	DUP	
			04/21/94	11800.00		V					2.58
							11500.00		V	DUP	
			08/16/94	11020.00		Z					1.46*
							11100.00		V	REAL	
							10900.00		V	DUP	
		4786	01/24/94	11600.00		V					-0.86
							11700.00		V	DUP	
			06/13/94	11400.00		V					0.88
							11300.00		V	DUP	

(* in RPD denotes multiple REAL sample results)

Relative Percent Differences

DMETADD	SILICON	5086	02/08/94	12800.00	V				-2.32
						13100.00	V	DUP	
			04/19/94	7410.00	Y				0.68
						7360.00	Y	DUP	
			07/28/94	12600.00	Y				
						12600.00	Y	DUP	
			10/10/94	12200.00	Y				
						12200.00	Y	DUP	
		6087	02/14/94	10500.00	J				2.90
						10200.00	J	DUP	
			04/14/94	9570.00	V				-59.63
						17700.00	V	DUP	
		6887	01/27/94	9600.00	V				-0.21
						9620.00	V	DUP	
			04/15/94	8840.00	V				-1.57
						8980.00	V	DUP	
		71893	03/15/94	11000.00	V				-46.69
						11400.00	V	DUP	
						24000.00	V	DUP	
		B410589	10/11/94	9260.00	Y				200.00*
						9280.00	Y	REAL	
		P114989	09/12/94	9883.03	Y				200.00*
						9790.00	Y	REAL	
		P415889	08/15/94	10180.00	Z				200.00*
						10400.00	V	REAL	
		P416189	02/17/94	8570.00	V				-71.83
						8250.00	V	DUP	
						28100.00	V	DUP	
			05/05/94	7710.00	V				-95.16
						8010.00	V	DUP	
						35400.00	V	DUP	
			08/23/94	8870.00	V				-89.85
						8980.00	V	DUP	
						37700.00	V	DUP	
	STRONTIUM	02691	05/18/94	576.00	V				1.40
						568.00	V	DUP	
		3086	10/06/94	2374.22	Y				200.00*
						2390.00	Y	REAL	
		46292	03/03/94	132.00 B	V				0.76

Relative Percent Differences

DMETADD	STRONTIUM					131.00	B	V	DUP	
			04/21/94	152.00 B	V					3.34
						147.00	B	V	DUP	
			08/16/94	138.37 B	Z					-0.95*
						137.00	B	V	REAL	
						139.00	B	V	DUP	
		4786	01/24/94	119.00 B	V					2.55
						116.00	B	V	DUP	
			06/13/94	109.00 B	V					-0.91
						110.00	B	V	DUP	
		5086	02/08/94	202.00	V					2.00
						198.00	B	V	DUP	
			04/19/94	113.00 J	Y					
						113.00	J	Y	DUP	
			07/28/94	189.00 B	Y					-0.53
						190.00	B	Y	DUP	
			10/10/94	193.00 B	Y					
						193.00	B	Y	DUP	
		6087	02/14/94	114.00 B	V					
						114.00	B	V	DUP	
			04/14/94	107.00 B	V					-4.57
						112.00	B	V	DUP	
		6887	01/27/94	146.00 B	V					1.38
						144.00	B	V	DUP	
			04/15/94	127.00 B	V					-0.78
						128.00	B	V	DUP	
		71893	03/15/94	214.00	V					-6.33
						218.00		V	DUP	
						238.00		V	DUP	
		B410589	10/11/94	239.12	Y					200.00*
						238.00		Y	REAL	
		P114989	09/12/94	174.17 B	Y					200.00*
						171.00	B	Y	REAL	
		P415889	08/15/94	293.18	Z					200.00*
						276.00		V	REAL	
		P416189	02/17/94	378.00	V					0.93
						368.00		V	DUP	
						381.00		V	DUP	
			05/05/94	297.00	V					-3.47

Relative Percent Differences

DMETADD	STRONTIUM						308.00		V	DUP	
							307.00		V	DUP	
			08/23/94	397.00		V					-1.87
							400.00		V	DUP	
							409.00		V	DUP	
	TIN	02691	05/18/94	26.00	U	J					
							26.00	U	J	DUP	
		3086	10/06/94	60.58	B	Y					200.00*
							50.40	B	Y	REAL	
		46292	03/03/94	25.00	U	V					
							25.00	U	V	DUP	
			04/21/94	26.00	U	V					-24.62
							33.30	B	V	DUP	
			08/16/94	27.00	U	Z					2.38*
							28.30	B	V	REAL	
							27.00	U	V	DUP	
		4786	01/24/94	27.00	U	V					
							27.00	U	V	DUP	
			06/13/94	26.00	U	V					
							26.00	U	V	DUP	
		5086	02/08/94	31.10	B	V					14.11
							27.00	U	V	DUP	
			04/19/94	27.50	J	Y					-2.51
							28.20	J	Y	DUP	
			07/28/94	12.00	U	Y					
							12.00	U	Y	DUP	
			10/10/94	37.00	U	Y					-12.66
							42.00	B	Y	DUP	
		6087	02/14/94	27.00	U	V					
							27.00	U	V	DUP	
			04/14/94	10.00	U	V					
							10.00	U	V	DUP	
		6887	01/27/94	25.00	U	V					
							25.00	U	V	DUP	
			04/15/94	10.00	U	V					
							10.00	U	V	DUP	
		71893	03/15/94	28.00	U	V					
							28.00	U	V	DUP	
							28.00	U	J	DUP	

(* in RPD denotes multiple REAL sample results)

Relative Percent Differences

DMETADD	TIN	B410589	10/11/94	37.00	U	Y					200.00*
							37.00	U	Y	REAL	
		P114989	09/12/94	12.00	U	Y					200.00*
							12.00	U	Y	REAL	
		P415889	08/15/94	27.00	U	Z					200.00*
							27.00	U	V	REAL	
		P416189	02/17/94	25.00	U	V					
							25.00	U	V	DUP	
							25.00	U	V	DUP	
			05/05/94	10.00	U	V					
							10.00	U	V	DUP	
							10.00	U	V	DUP	
			08/23/94	12.00	U	V					
							12.00	U	V	DUP	
							12.00	U	V	DUP	
	CESIUM	02691	05/18/94	11.00	U	J					-16.67
							13.00	U	J	DUP	
		3086	10/06/94	77.00	B	Y					200.00*
							64.00	B	Y	REAL	
		46292	03/03/94	63.00	U	V					
							63.00	U	V	DUP	
			04/21/94	42.00	U	J					-23.16
							53.00	U	J	DUP	
			08/16/94	20.00	U	Z					*
							20.00	U	V	REAL	
							20.00	U	V	DUP	
		4786	01/24/94	24.00	U	J					8.70
							22.00	U	J	DUP	
			06/13/94	38.00	U	J					-5.13
							40.00	U	J	DUP	
		5086	02/08/94	18.00	U	J					
							18.00	U	J	DUP	
			04/19/94	8.00	U	Y					
							8.00	U	Y	DUP	
			07/28/94	43.00	U	Y					
							43.00	U	Y	DUP	
			10/10/94	74.00	B	Y					2.74
							72.00	B	Y	DUP	
		6087	02/14/94	10.00	UN	J					

Relative Percent Differences

DMETADD	CESIUM					10.00	UN	J	DUP	
			04/14/94	63.00 U	V					
						63.00	U	V	DUP	
		6887	01/27/94	85.00 U	V					
						85.00	U	V	DUP	
			04/15/94	90.00 U	J					-20.00
						110.00	U	J	DUP	
		71893	03/15/94	10.00 U	J					
						10.00	U	J	DUP	
						10.00	U	V	DUP	
		B410589	10/11/94	20.00 U	Y					200.00*
						20.00	UN	Y	REAL	
		P114989	09/12/94	43.00 U	Y					200.00*
						43.00	U	Y	REAL	
		P415889	08/15/94	20.00 U	Z					200.00*
						20.00	U	V	REAL	
		P416189	02/17/94	120.00 U	J					34.15
						85.00	U	V	DUP	
			05/05/94	70.00 U	J					5.13
						70.00	U	J	DUP	
						63.00	U	V	DUP	
			08/23/94	43.00 U	J					
						43.00	U	V	DUP	
DMETAPPI	LEAD	4786	07/27/94	0.70 U	Y					
						0.70	U	Y	DUP	
		6087	08/09/94	0.90 U	Y					*
						0.90	U	Y	REAL	
						0.90	U	Y	DUP	
		6887	08/02/94	0.70 U	Y					*
						0.70	U	Y	REAL	
						0.70	U	Y	DUP	
		70093	08/29/94	0.70 U	Y					200.00*
						0.70	U	Y	REAL	
	MERCURY	4786	07/27/94	0.10 U	Y					
						0.10	U	Y	DUP	
		6087	08/09/94	0.10 U	Y					*
						0.10	U	Y	REAL	
						0.10	U	Y	DUP	
		6887	08/02/94	0.10 U	Y					*

(* in RPD denotes multiple REAL sample results)

Relative Percent Differences

DMETAPPI	MERCURY						0.10	U	Y	REAL	
							0.10	U	Y	DUP	
		70093	08/29/94	0.10	U	Y					200.00 *
							0.10	U	Y	REAL	
	NICKEL	4786	07/27/94	11.40	U	Y					
							11.40	U	Y	DUP	
		6087	08/09/94	11.40	U	Y					*
							11.40	U	Y	REAL	
							11.40	U	Y	DUP	
		6887	08/02/94	11.40	U	Y					*
							11.40	U	Y	REAL	
							11.40	U	Y	DUP	
		70093	08/29/94	6.40	B	Y					200.00 *
							8.70	B	Y	REAL	
	SILVER	4786	07/27/94	4.20	U	Y					
							4.20	U	Y	DUP	
		6087	08/09/94	4.20	U	Y					*
							4.20	U	Y	REAL	
							4.20	U	Y	DUP	
		6887	08/02/94	4.20	U	Y					*
							4.20	U	Y	REAL	
							4.20	U	Y	DUP	
		70093	08/29/94	4.20	U	Y					200.00 *
							4.20	U	Y	REAL	
	THALLIUM	4786	07/27/94	2.70	U	Y					
							2.70	U	Y	DUP	
		6087	08/09/94	1.20	U	Y					*
							1.20	U	Y	REAL	
							1.20	U	Y	DUP	
		6887	08/02/94	2.70	U	Y					*
							2.70	U	Y	REAL	
							2.70	U	Y	DUP	
		70093	08/29/94	5.70	B	Y					200.00 *
							6.70	B	Y	REAL	
	TIN	4786	07/27/94	19.20	U	Y					
							19.20	U	Y	DUP	
		6087	08/09/94	19.20	U	Y					*
							19.20	U	Y	REAL	
							19.20	U	Y	DUP	

(* in RPD denotes multiple REAL sample results)

Relative Percent Differences

DMETAPPI	TIN	6887	08/02/94	19.20	U	Y					*
							19.20	U	Y	REAL	
							19.20	U	Y	DUP	
		70093	08/29/94	19.00	U	Y					200.00*
							19.00	U	Y	REAL	
	ANTIMONY	4786	07/27/94	30.50	U	Y					
							30.50	U	Y	DUP	
		6087	08/09/94	30.50	U	Y					*
							30.50	U	Y	REAL	
							30.50	U	Y	DUP	
		6887	08/02/94	30.50	U	Y					*
							30.50	U	Y	REAL	
							30.50	U	Y	DUP	
		70093	08/29/94	19.50	U	Y					200.00*
							30.00	B	Y	REAL	
	ARSENIC	4786	07/27/94	1.70	U	Y					
							1.70	U	Y	DUP	
		6087	08/09/94	0.90	U	Y					*
							0.90	U	Y	REAL	
							0.90	U	Y	DUP	
		6887	08/02/94	1.70	U	Y					*
							1.70	U	Y	REAL	
							1.70	U	Y	DUP	
		70093	08/29/94	1.70	U	Y					200.00*
							2.30	B	Y	REAL	
	BARIUM	4786	07/27/94	45.40	B	Y					1.55
							44.70	B	Y	DUP	
		6087	08/09/94	70.00	B	Y					1.16*
							69.20	B	Y	REAL	
							68.80	B	Y	DUP	
		6887	08/02/94	101.00	B	Y					3.42*
							101.00	B	Y	REAL	
							97.60	B	Y	DUP	
		70093	08/29/94	73.60	B	Y					200.00*
							74.30	B	Y	REAL	
	BERYLLIUM	4786	07/27/94	0.69	B	Y					
							0.69	B	Y	DUP	
		6087	08/09/94	0.79	B	Y					57.99*
							0.30	U	Y	REAL	

Relative Percent Differences

DMETAPPI	BERYLLIUM						0.30	U	Y	DUP	
		6887	08/02/94	0.69	B	Y					*
							0.69	B	Y	REAL	
							0.69	B	Y	DUP	
		70093	08/29/94	1.10	B	Y					200.00*
							0.72	B	Y	REAL	
	CADMIUM	4786	07/27/94	2.20	U	Y					
							2.20	U	Y	DUP	
		6087	08/09/94	2.20	U	Y					*
							2.20	U	Y	REAL	
							2.20	U	Y	DUP	
		6887	08/02/94	2.20	U	Y					*
							2.20	U	Y	REAL	
							2.20	U	Y	DUP	
		70093	08/29/94	1.80	U	Y					200.00*
							2.00	B	Y	REAL	
	CHROMIUM	4786	07/27/94	3.00	U	Y					
							3.00	U	Y	DUP	
		6087	08/09/94	3.00	U	Y					*
							3.00	U	Y	REAL	
							3.00	U	Y	DUP	
		6887	08/02/94	3.00	U	Y					*
							3.00	U	Y	REAL	
							3.00	U	Y	DUP	
		70093	08/29/94	2.80	U	Y					200.00*
							2.80	U	Y	REAL	
	COBALT	4786	07/27/94	3.20	U	Y					
							3.20	U	Y	DUP	
		6087	08/09/94	3.20	U	Y					*
							3.20	U	Y	REAL	
							3.20	U	Y	DUP	
		6887	08/02/94	3.20	U	Y					*
							3.20	U	Y	REAL	
							3.20	U	Y	DUP	
		70093	08/29/94	2.90	U	Y					200.00*
							2.90	U	Y	REAL	
	COPPER	4786	07/27/94	4.50	U	Y					
							4.50	U	Y	DUP	
		6087	08/09/94	10.00	B	Y					-1.66*

Relative Percent Differences

DMETAPPI	COPPER					7.90 B	Y	REAL	
						9.10 B	Y	DUP	
		6887	08/02/94	4.50 U	Y				*
						4.50 U	Y	REAL	
						4.50 U	Y	DUP	
		70093	08/29/94	4.50 U	Y				200.00*
						8.20 B	Y	REAL	
	VANADIUM	4786	07/27/94	12.30 B	Y				22.62
						9.80 U	Y	DUP	
		6087	08/09/94	14.00 B	Y				5.41*
						12.60 B	Y	REAL	
						12.60 B	Y	DUP	
		6887	08/02/94	12.10 B	Y				31.22*
						15.30 B	Y	REAL	
						10.00 B	Y	DUP	
		70093	08/29/94	10.50 B	Y				200.00*
						24.00 B	Y	REAL	
	ZINC	4786	07/27/94	3.80 U	Y				
						3.80 U	Y	DUP	
		6087	08/09/94	7.60 B	Y				10.21*
						9.90 B	Y	REAL	
						7.90 B	Y	DUP	
		6887	08/02/94	3.80 U	Y				*
						3.80 U	Y	REAL	
						3.80 U	Y	DUP	
		70093	08/29/94	5.10 B	Y				200.00*
						9.90 B	Y	REAL	
	SELENIUM	4786	07/27/94	2.10 B	Y				-4.65
						2.20 B	Y	DUP	
		6087	08/09/94	0.78 B	Y				5.56*
						0.70 U	Y	REAL	
						0.70 U	Y	DUP	
		6887	08/02/94	1.60 U	Y				-21.05*
						1.80 B	Y	REAL	
						2.10 B	Y	DUP	
		70093	08/29/94	1.60 U	Y				200.00*
						1.60 U	Y	REAL	
DSMETCLP	ALUMINUM	02691	05/18/94	49.00 U	V				
						49.00 U	V	DUP	

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Relative Percent Differences

DSMETCLP	ALUMINUM	3086	10/06/94	16.00	U	Y					200.00*
							16.00	U	Y	REAL	
		46292	03/03/94	64.80	U	J					80.52
							27.60	U	J	DUP	
			04/21/94	49.00	U	V					
							49.00	U	V	DUP	
			08/16/94	31.00	U	Z					*
							31.00	U	V	REAL	
							31.00	U	V	DUP	
		4786	01/24/94	38.40	U	J					7.57
							35.60	U	J	DUP	
			06/13/94	50.20	B	V					-64.51
							98.00	B	V	DUP	
		5086	02/08/94	27.00	U	V					-165.61
							287.00		V	DUP	
			04/19/94	49.00	U	Y					
							49.00	U	Y	DUP	
			07/28/94	12.00	U	Y					
							12.00	U	Y	DUP	
			10/10/94	16.00	U	Y					
							16.00	U	Y	DUP	
		6087	02/14/94	27.00	U	V					
							27.00	U	V	DUP	
			04/14/94	11.00	U	V					-198.88
							3910.00		V	DUP	
		6887	01/27/94	13.00	U	V					
							13.00	U	V	DUP	
			04/15/94	11.00	U	J					
							11.00	U	J	DUP	
		71893	03/15/94	27.00	U	V					-196.67
							27.00	U	V	DUP	
							6410.00		V	DUP	
		B410589	10/11/94	16.00	U	Y					200.00*
							16.00	U	Y	REAL	
		P114989	09/12/94	12.00	U	Y					200.00*
							16.80	B	Y	REAL	
		P415889	08/15/94	31.00	U	Z					200.00*
							31.00	U	V	REAL	
		P416189	02/17/94	13.00	U	V					-198.97

(* in RPD denotes multiple REAL sample results)

Relative Percent Differences

DSMETCLP	ALUMINUM						13.00	U	V	DUP	
							10100.00		V	DUP	
			05/05/94	11.00	U	V					-199.37
							11.00	U	V	DUP	
							14000.00		V	DUP	
			08/23/94	12.00	U	V					-199.34
							12.00	U	V	DUP	
							14400.00	N	J	DUP	
	IRON	02691	05/18/94	18.00	U	V					
							18.00	U	V	DUP	
		3086	10/06/94	7.00	U	Y					200.00*
							7.00	U	Y	REAL	
		46292	03/03/94	79.80	B	V					105.16
							24.80	U	J	DUP	
			04/21/94	18.00	U	V					
							18.00	U	V	DUP	
			08/16/94	24.72	B	Z					35.67*
							24.90	U	J	REAL	
							17.30	U	J	DUP	
		4786	01/24/94	20.60	U	J					-44.23
							32.30	U	J	DUP	
			06/13/94	26.00	B	V					-54.95
							45.70	B	V	DUP	
		5086	02/08/94	10.60	B	V					-182.08
							226.00		V	DUP	
			04/19/94	18.00	U	Y					
							18.00	U	Y	DUP	
			07/28/94	4.70	B	Y					-189.18
							169.00		Y	DUP	
			10/10/94	7.60	B	Y					-11.18
							8.50	B	Y	DUP	
		6087	02/14/94	9.00	U	V					
							9.00	U	V	DUP	
			04/14/94	14.80	B	V					-198.67
							4440.00		V	DUP	
		6887	01/27/94	8.00	U	V					-11.76
							9.00	U	J	DUP	
			04/15/94	5.20	B	V					3.92
							5.00	U	V	DUP	

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Relative Percent Differences

DSMETCLP	IRON	71893	03/15/94	9.00 U	V						-199.06
						10.00	U	J	DUP		
						7660.00		V	DUP		
		B410589	10/11/94	7.00 U	Y						200.00 *
						7.00	U	Y	REAL		
		P114989	09/12/94	12.23 B	Y						200.00 *
						11.70	B	Y	REAL		
		P415889	08/15/94	12.14 B	Z						200.00 *
						14.50	U	J	REAL		
		P416189	02/17/94	8.00 U	V						-199.34
						8.00	U	V	DUP		
						9650.00		V	DUP		
			05/05/94	5.00 U	V						-199.68
						5.00	U	V	DUP		
						12500.00		V	DUP		
			08/23/94	7.80 U	J						-199.60
						9.00	B	V	DUP		
						15600.00	N	J	DUP		
	LEAD	02691	05/18/94	2.00 U	V						
						2.00	U	V	DUP		
		3086	10/06/94	2.00 U	Y						200.00 *
						2.00	U	Y	REAL		
		46292	03/03/94	1.00 U	V						
						1.00	U	V	DUP		
			04/21/94	2.00 UW	J						
						2.00	U	V	DUP		
			08/16/94	2.00 U	Z						*
						2.00	U	V	REAL		
						2.00	U	V	DUP		
		4786	01/24/94	1.00 U	J						
						1.00	U	J	DUP		
			06/13/94	2.00 U	V						
						2.00	U	V	DUP		
		5086	02/08/94	1.00 U	V						
						1.00	U	V	DUP		
			04/19/94	2.00 U	Y						
						2.00	U	Y	DUP		
			07/28/94	1.00 U	Y						
						1.00	U	Y	DUP		

Relative Percent Differences

DSMETCLP	LEAD		10/10/94	2.00 U	Y						
						2.00	U	Y	DUP	
		6087	02/14/94	1.00 U	V					
						1.00	U	V	DUP	
			04/14/94	1.00 U	V					-62.07
						1.90	B	V	DUP	
		6887	01/27/94	1.00 U	V					
						1.00	U	V	DUP	
			04/15/94	1.00 U	V					
						1.00	U	V	DUP	
		71893	03/15/94	2.00 U	V					-46.15
						2.00	U	V	DUP	
						4.40	B	V	DUP	
		B410589	10/11/94	2.00 U	Y					200.00*
						2.00	U	Y	REAL	
		P114989	09/12/94	1.00 U	Y					200.00*
						1.00	U	Y	REAL	
		P415889	08/15/94	2.00 U	Z					200.00*
						2.00	U	J	REAL	
		P416189	02/17/94	1.00 U	V					-88.89
						1.00	U	V	DUP	
						4.20	S	V	DUP	
			05/05/94	1.00 U	V					-102.44
						1.00	U	V	DUP	
						5.20	U	J	DUP	
			08/23/94	1.00 U	V					-118.37
						1.70	BW	J	DUP	
						6.10		V	DUP	
	MAGNESIUM	02691	05/18/94	17400.00	V					1.74
						17100.00		V	DUP	
		3086	10/06/94	74919.11	Y					200.00*
						75500.00		Y	REAL	
		46292	03/03/94	4260.00 B	V					
						4260.00	B	V	DUP	
			04/21/94	4660.00 B	V					3.49
						4500.00	B	V	DUP	
			08/16/94	4423.95 B	Z					0.27*
						4340.00	B	V	REAL	
						4370.00	B	V	DUP	

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Relative Percent Differences

DSMETCLP	MAGNESIUM	4786	01/24/94	3850.00 B	V					2.10
						3770.00 B	V	DUP		
			06/13/94	3620.00 B	V					1.11
						3580.00 B	V	DUP		
		5086	02/08/94	5660.00	V					0.71
						5620.00	V	DUP		
			04/19/94	3250.00 J	Y					1.55
						3200.00 J	Y	DUP		
			07/28/94	5590.00	Y					-0.71
						5630.00	Y	DUP		
			10/10/94	5680.00	Y					-0.53
						5710.00	Y	DUP		
		6087	02/14/94	4050.00 B	V					0.99
						4010.00 B	V	DUP		
			04/14/94	4080.00 B	V					-17.45
						4860.00 B	V	DUP		
		6887	01/27/94	5060.00	V					1.59
						4980.00 B	V	DUP		
			04/15/94	4750.00 B	V					-3.52
						4920.00 B	V	DUP		
		71893	03/15/94	7250.00	V					-10.77
						7430.00	V	DUP		
						8720.00	V	DUP		
		B410589	10/11/94	9832.46	Y					200.00*
						9800.00	Y	REAL		
		P114989	09/12/94	4872.41 B	Y					200.00*
						4790.00 B	Y	REAL		
		P415889	08/15/94	9417.90	Z					200.00*
						8970.00	V	REAL		
		P416189	02/17/94	11400.00	V					-4.29
						11100.00	V	DUP		
						12700.00	V	DUP		
			05/05/94	9040.00	V					-11.62
						9410.00	V	DUP		
						10900.00	V	DUP		
			08/23/94	11800.00	V					-10.06
						12000.00	V	DUP		
						14100.00	V	DUP		
	MANGANESE	02691	05/18/94	3.00 U	V					

(* in RPD denotes multiple REAL sample results)

Relative Percent Differences

DSMETCLP MANGANESE					3.00 U	V	DUP		
	3086	10/06/94	3.37 B	Y				200.00*
					3.40 B	Y	REAL	
	46292	03/03/94	5.60 B	V				19.61
					4.60 U	J	DUP	
		04/21/94	3.00 U	V				
					3.00 U	V	DUP	
		08/16/94	2.00 U	Z				*
					2.00 U	V	REAL	
					2.00 U	V	DUP	
	4786	01/24/94	2.00 U	V				-4.88
					2.10 U	J	DUP	
		06/13/94	3.00 UN	J				
					3.00 UN	J	DUP	
	5086	02/08/94	2.00 U	V				-149.04
					13.70 U	J	DUP	
		04/19/94	3.00 U	Y				
					3.00 U	Y	DUP	
		07/28/94	1.10 B	Y				-30.77
					1.50 B	Y	DUP	
		10/10/94	1.00 U	Y				
					1.00 U	Y	DUP	
	6087	02/14/94	3.40 U	J				2.99
					3.30 U	J	DUP	
		04/14/94	2.80 B	V				-164.56
					28.80	V	DUP	
	6887	01/27/94	13.80 B	V				3.69
					13.30 B	V	DUP	
		04/15/94	9.40 B	V				-5.18
					9.90 B	V	DUP	
	71893	03/15/94	102.00	V				-41.98
					98.40	V	DUP	
					214.00	V	DUP	
	B410589	10/11/94	1.50 B	Y				200.00*
					1.20 B	Y	REAL	
	P114989	09/12/94	4.22 B	Y				200.00*
					3.60 B	Y	REAL	
	P415889	08/15/94	3.59 B	Z				200.00*
					3.80 U	J	REAL	

Relative Percent Differences

DSMETCLP	MANGANESE	P416189	02/17/94	2.10	B	V					-189.24
							1.00	U	V	DUP	
							151.00		V	DUP	
			05/05/94	2.00	B	V					-191.14
							1.60	B	V	DUP	
							175.00		V	DUP	
			08/23/94	1.00	U	V					-197.02
							1.10	B	V	DUP	
							265.00		V	DUP	
	MERCURY	02691	05/18/94	0.20	U	V					
							0.20	U	V	DUP	
		3086	10/06/94	0.20	U	Y					200.00*
							0.20	U	Y	REAL	
		46292	03/03/94	0.20	U	V					
							0.20	U	V	DUP	
			04/21/94	0.20	U	V					
							0.20	U	V	DUP	
			08/16/94	0.20	U	Z					*
							0.20	U	V	REAL	
							0.20	U	V	DUP	
		4786	01/24/94	0.20	U	V					
							0.20	U	V	DUP	
			06/13/94	0.20	U	V					
							0.20	U	V	DUP	
		5086	02/08/94	0.20	U	V					
							0.20	U	V	DUP	
			04/19/94	0.20	U	Y					
							0.20	U	Y	DUP	
			07/28/94	0.20	U	Y					
							0.20	U	Y	DUP	
			10/10/94	0.20	U	Y					
							0.20	U	Y	DUP	
		6087	02/14/94	0.20	U	V					
							0.20	U	V	DUP	
			04/14/94	0.20	U	V					
							0.20	U	V	DUP	
		6887	01/27/94	0.20	U	V					
							0.20	U	V	DUP	
			04/15/94	0.20	U	V					

Relative Percent Differences

DSMETCLP	MERCURY					0.20	U	V	DUP	
		71893	03/15/94	0.20 U	V					
						0.20	U	V	DUP	
						0.20	U	V	DUP	
		B410589	10/11/94	0.20 U	Y					200.00*
						0.20	U	Y	REAL	
		P114989	09/12/94	0.20 U	Y					200.00*
						0.20	U	Y	REAL	
		P415889	08/15/94	0.20 U	Z					200.00*
						0.20	U	V	REAL	
		P416189	02/17/94	0.20 U	V					
						0.20	U	V	DUP	
						0.20	U	V	DUP	
			05/05/94	0.20 U	V					
						0.20	U	V	DUP	
						0.20	U	V	DUP	
			08/23/94	0.20 U	V					
						0.20	U	V	DUP	
						0.20	U	V	DUP	
	NICKEL	02691	05/18/94	13.00 U	V					
						13.00	U	V	DUP	
		3086	10/06/94	10.00 U	Y					200.00*
						20.10	B	Y	REAL	
		46292	03/03/94	8.00 U	V					
						8.00	U	V	DUP	
			04/21/94	13.00 U	V					
						13.00	U	V	DUP	
			08/16/94	8.00 U	Z					*
						8.00	U	V	REAL	
						8.00	U	V	DUP	
		4786	01/24/94	11.00 U	V					
						11.00	U	V	DUP	
			06/13/94	13.00 U	V					
						13.00	U	V	DUP	
		5086	02/08/94	11.00 U	V					
						11.00	U	V	DUP	
			04/19/94	13.00 U	Y					
						13.00	U	Y	DUP	
			07/28/94	6.00 U	Y					

Relative Percent Differences

DSMETCLP	NICKEL						6.00	U	Y	DUP	
			10/10/94	10.00	U	Y					
							10.00	U	Y	DUP	
		6087	02/14/94	11.00	U	V					
							11.00	U	V	DUP	
			04/14/94	6.00	U	V					-35.62
							8.60	B	V	DUP	
		6887	01/27/94	8.00	U	V					
							8.00	U	V	DUP	
			04/15/94	6.00	U	V					
							6.00	U	V	DUP	
		71893	03/15/94	11.00	U	V					-11.97
							13.80	B	V	DUP	
							11.00	U	V	DUP	
		B410589	10/11/94	10.00	U	Y					200.00*
							10.00	U	Y	REAL	
		P114989	09/12/94	6.00	U	Y					200.00*
							6.00	U	Y	REAL	
		P415889	08/15/94	8.00	U	Z					200.00*
							8.00	U	V	REAL	
		P416189	02/17/94	8.00	U	V					
							8.00	U	V	DUP	
							8.00	U	V	DUP	
			05/05/94	6.00	U	V					-36.18
							6.00	U	V	DUP	
							11.30	B	V	DUP	
			08/23/94	6.00	U	V					-69.92
							6.00	U	V	DUP	
							18.90	B	V	DUP	
	POTASSIUM	02691	05/18/94	1620.00	B	V					-24.86
							2080.00	B	V	DUP	
		3086	10/06/94	16097.81		Y					200.00*
							16000.00		Y	REAL	
		46292	03/03/94	1080.00	U	J					-21.49
							1340.00	U	J	DUP	
			04/21/94	909.00	U	J					-8.33
							988.00	U	J	DUP	
			08/16/94	798.25	B	Z					-27.09*
							816.00	B	V	REAL	

Relative Percent Differences

DSMETCLP POTASSIUM					1060.00 B	V	DUP		
	4786	01/24/94	659.00 B	V				-8.43	
					717.00 B	V	DUP		
		06/13/94	483.00 U	J					
					483.00 U	J	DUP		
	5086	02/08/94	854.00 B	J				38.55	
					578.00 U	J	DUP		
		04/19/94	483.00 U	Y				-40.07	
					725.00 J	Y	DUP		
		07/28/94	1040.00 B	Y				32.40	
					750.00 B	Y	DUP		
		10/10/94	620.00 U	Y					
					620.00 U	Y	DUP		
	6087	02/14/94	678.00 B	V				15.92	
					578.00 U	V	DUP		
		04/14/94	294.00 B	V				-122.83	
					1230.00 B	V	DUP		
	6887	01/27/94	509.00 B	V				-26.72	
					666.00 B	V	DUP		
		04/15/94	406.00 B	V				49.85	
					244.00 U	V	DUP		
	71893	03/15/94	578.00 U	V				-91.81	
					578.00 U	V	DUP		
					2540.00 B	V	DUP		
	B410589	10/11/94	620.00 U	Y				200.00	*
					715.00 B	Y	REAL		
	P114989	09/12/94	1082.03 B	Y				200.00	*
					1290.00 B	Y	REAL		
	P415889	08/15/94	1130.86 B	Z				200.00	*
					695.00 B	J	REAL		
	P416189	02/17/94	715.00 B	V				-84.91	
					1010.00 B	V	DUP		
					2530.00 B	V	DUP		
		05/05/94	747.00 U	J				-72.25	
					784.00 U	J	DUP		
					2400.00 B	V	DUP		
		08/23/94	808.00 U	J				-69.44	
					495.00 B	V	DUP		
					2840.00 B	V	DUP		

(* in RPD denotes multiple REAL sample results)

Relative Percent Differences

DSMETCLP	SILVER	02691	05/18/94	5.00 U	V					
						5.00 U	V	DUP		
		3086	10/06/94	4.00 U	Y					200.00*
						4.00 U	Y	REAL		
		46292	03/03/94	2.00 U	V					
						2.00 U	V	DUP		
			04/21/94	5.00 U	V					
						5.00 U	V	DUP		
			08/16/94	4.00 U	Z					*
						4.00 U	V	REAL		
						4.00 U	V	DUP		
		4786	01/24/94	4.00 U	V					
						4.00 U	V	DUP		
			06/13/94	5.00 U	V					
						5.00 U	V	DUP		
		5086	02/08/94	4.00 U	V					
						4.00 U	V	DUP		
			04/19/94	5.00 U	Y					
						5.00 U	Y	DUP		
			07/28/94	2.00 U	Y					
						2.00 U	Y	DUP		
			10/10/94	4.00 U	Y					
						4.00 U	Y	DUP		
		6087	02/14/94	4.00 U	V					
						4.00 U	V	DUP		
			04/14/94	2.00 U	V					
						2.00 U	V	DUP		
		6887	01/27/94	2.00 U	V					
						2.00 U	V	DUP		
			04/15/94	2.00 U	V					
						2.00 U	V	DUP		
		71893	03/15/94	4.00 U	V					
						4.00 U	V	DUP		
						4.00 U	V	DUP		
		B410589	10/11/94	4.00 U	Y					200.00*
						4.00 U	Y	REAL		
		P114989	09/12/94	2.00 U	Y					200.00*
						2.00 U	Y	REAL		
		P415889	08/15/94	4.00 U	Z					200.00*

Relative Percent Differences

DSMETCLP	SILVER						4.00	U	V	REAL	
		P416189	02/17/94	2.00	U	V					
							2.00	U	V	DUP	
							2.00	U	V	DUP	
			05/05/94	2.00	U	V					
							2.00	U	V	DUP	
							2.00	U	V	DUP	
			08/23/94	2.00	UN	J					
							2.00	UN	J	DUP	
							2.00	UN	J	DUP	
	SODIUM	02691	05/18/94	33100.00		V					0.91
							32800.00		V	DUP	
		3086	10/06/94	47549.25		Y					200.00 *
							653000.00		Y	REAL	
		46292	03/03/94	15100.00		V					
							15100.00		V	DUP	
			04/21/94	15100.00		V					-4.53
							15800.00		V	DUP	
			08/16/94	14443.46		Z					-0.89 *
							14300.00		V	REAL	
							14500.00		V	DUP	
		4786	01/24/94	15500.00		V					3.28
							15000.00		V	DUP	
			06/13/94	14300.00		V					-0.70
							14400.00		V	DUP	
		5086	02/08/94	9940.00		V					1.83
							9760.00		V	DUP	
			04/19/94	8500.00		Y					1.30
							8390.00		Y	DUP	
			07/28/94	10200.00		Y					
							10200.00		Y	DUP	
			10/10/94	10400.00		Y					0.97
							10300.00		Y	DUP	
		6087	02/14/94	10300.00		V					0.98
							10200.00		V	DUP	
			04/14/94	10300.00		V					-0.97
							10400.00		V	DUP	
		6887	01/27/94	13400.00		V					3.03
							13000.00		V	DUP	

Relative Percent Differences

DSMETCLP	SODIUM		04/15/94	10700.00	V					-0.93
						10800.00		V	DUP	
		71893	03/15/94	9880.00	V					-16.44
						10300.00		V	DUP	
						13000.00		V	DUP	
		B410589	10/11/94	11370.31	Y					200.00 *
						11300.00		Y	REAL	
		P114989	09/12/94	19231.18	Y					200.00 *
						18800.00		Y	REAL	
		P415889	08/15/94	11940.08	Z					200.00 *
						11200.00		V	REAL	
		P416189	02/17/94	8700.00	V					-1.14
						8400.00		V	DUP	
						9200.00		V	DUP	
			05/05/94	7660.00	V					-4.84
						7980.00		V	DUP	
						8100.00		V	DUP	
			08/23/94	8690.00	V					-1.94
						8850.00		V	DUP	
						8870.00		V	DUP	
	THALLIUM	02691	05/18/94	5.00 U	V					
						5.00	U	V	DUP	
		3086	10/06/94	3.00 U	Y					200.00 *
						3.00	U	Y	REAL	
		46292	03/03/94	1.00 U	J					
						1.00	U	J	DUP	
			04/21/94	5.00 U	V					
						5.00	U	V	DUP	
			08/16/94	4.00 U	Z					*
						4.00	U	V	REAL	
						4.00	U	V	DUP	
		4786	01/24/94	3.00 U	V					
						3.00	U	V	DUP	
			06/13/94	5.00 U	V					
						5.00	U	V	DUP	
		5086	02/08/94	3.00 U	V					
						3.00	U	V	DUP	
			04/19/94	5.00 U	Y					
						5.00	U	Y	DUP	

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Relative Percent Differences

DSMETCLP	THALLIUM		07/28/94	2.00	U	Y					
							2.00	UW	Y	DUP	
			10/10/94	3.00	U	Y					
							3.00	U	Y	DUP	
		6087	02/14/94	3.00	U	V					
							3.00	U	V	DUP	
			04/14/94	2.00	U	V					
							2.00	U	V	DUP	
		6887	01/27/94	2.00	UW	V					
							2.00	U	V	DUP	
			04/15/94	2.00	U	V					
							2.00	U	V	DUP	
		71893	03/15/94	5.00	U	V					
							5.00	U	V	DUP	
							5.00	U	V	DUP	
		B410589	10/11/94	3.00	U	Y					200.00 *
							3.00	U	Y	REAL	
		P114989	09/12/94	2.00	U	Y					200.00 *
							2.00	U	Y	REAL	
		P415889	08/15/94	4.00	U	Z					200.00 *
							4.00	U	V	REAL	
		P416189	02/17/94	2.00	U	V					
							2.00	U	V	DUP	
							2.00	U	V	DUP	
			05/05/94	1.00	UWN	J					
							1.00	UWN	J	DUP	
							1.00	UWN	J	DUP	
			08/23/94	1.00	UW	J					
							1.00	UWN	J	DUP	
							1.00	UWN	J	DUP	
	ANTIMONY	02691	05/18/94	34.00	U	V					
							34.00	U	V	DUP	
		3086	10/06/94	50.00	U	Y					200.00 *
							50.00	U	Y	REAL	
		46292	03/03/94	18.00	U	V					
							18.00	U	V	DUP	
			04/21/94	34.00	U	V					
							34.00	U	V	DUP	
			08/16/94	46.00	U	Z					*

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Relative Percent Differences

DSMETCLP	ANTIMONY					46.00	U	V	REAL	
						46.00	U	V	DUP	
	4786	01/24/94	49.00	U	V					
						49.00	U	V	DUP	
		06/13/94	34.00	U	J					
						34.00	U	V	DUP	
	5086	02/08/94	49.00	U	V					
						49.00	U	V	DUP	
		04/19/94	34.00	U	Y					
						34.00	U	Y	DUP	
		07/28/94	13.00	U	Y					
						13.00	U	Y	DUP	
		10/10/94	50.00	U	Y					
						50.00	U	Y	DUP	
	6087	02/14/94	49.00	U	V					
						49.00	U	V	DUP	
		04/14/94	14.00	U	V					
						14.00	U	V	DUP	
	6887	01/27/94	18.00	U	V					
						18.00	U	V	DUP	
		04/15/94	14.00	U	V					
						14.00	U	V	DUP	
	71893	03/15/94	49.00	U	V					
						49.00	U	V	DUP	
						49.00	U	J	DUP	
	B410589	10/11/94	50.00	U	Y					200.00 *
						50.00	U	Y	REAL	
	P114989	09/12/94	13.00	U	Y					200.00 *
						13.00	U	Y	REAL	
	P415889	08/15/94	46.00	U	Z					200.00 *
						46.00	U	V	REAL	
	P416189	02/17/94	18.00	U	V					-5.14
						18.00	U	V	DUP	
						19.90	U	J	DUP	
		05/05/94	14.00	U	V					
						14.00	U	V	DUP	
						14.00	U	V	DUP	
		08/23/94	13.00	U	V					
						13.00	U	V	DUP	

Relative Percent Differences

DSMETCLP	ANTIMONY					13.00	U	V	DUP	
	ARSENIC	02691	05/18/94	3.00 UWN	V					
						3.00	UWN	V	DUP	
		3086	10/06/94	2.00 U	Y					200.00*
						2.00	U	Y	REAL	
		46292	03/03/94	1.00 U	V					
						1.00	U	V	DUP	
			04/21/94	3.00 UW	V					
						3.00	UW	V	DUP	
			08/16/94	3.00 U	Z					*
						3.00	UW	V	REAL	
						3.00	UW	V	DUP	
		4786	01/24/94	3.00 U	V					
						3.00	U	V	DUP	
			06/13/94	3.00 U	V					
						3.00	U	V	DUP	
		5086	02/08/94	3.00 UW	V					
						3.00	UW	V	DUP	
			04/19/94	3.00 U	Y					
						3.00	U	Y	DUP	
			07/28/94	2.00 U	Y					
						2.00	U	Y	DUP	
			10/10/94	2.00 U	Y					
						2.00	U	Y	DUP	
		6087	02/14/94	3.00 UW	V					
						3.00	UW	V	DUP	
			04/14/94	1.00 U	V					
						1.00	U	V	DUP	
		6887	01/27/94	1.00 UW	V					
						1.00	U	V	DUP	
			04/15/94	1.00 U	V					
						1.00	U	V	DUP	
		71893	03/15/94	3.00 UW	V					
						3.00	UW	V	DUP	
						3.00	UW	V	DUP	
		B410589	10/11/94	3.00 U	Y					200.00*
						3.00	U	Y	REAL	
		P114989	09/12/94	2.00 U	Y					200.00*
						2.00	U	Y	REAL	

DSMETCLP	ARSENIC	P415889	08/15/94	3.00 U	Z					200.00 *
						3.00	U	V	REAL	
		P416189	02/17/94	1.00 U	V					-36.73
						1.00	U	V	DUP	
						1.90	U	J	DUP	
			05/05/94	1.00 U	V					
						1.00	U	V	DUP	
						1.00	U	V	DUP	
			08/23/94	2.00 U	V					
						2.00	U	V	DUP	
						2.00	U	V	DUP	
	BARIUM	02691	05/18/94	187.00 B	V					1.08
						185.00	B	V	DUP	
		3086	10/06/94	59.08 B	Y					200.00 *
						59.00	B	Y	REAL	
		46292	03/03/94	60.50 B	V					-1.31
						61.30	B	V	DUP	
			04/21/94	62.80 B	V					-3.75
						65.20	B	V	DUP	
			08/16/94	60.55 B	Z					-1.20 *
						59.80	B	V	REAL	
						60.90	B	V	DUP	
		4786	01/24/94	49.00 B	V					2.90
						47.60	B	V	DUP	
			06/13/94	47.00 B	V					-1.06
						47.50	B	V	DUP	
		5086	02/08/94	60.20 B	V					-2.78
						61.90	B	V	DUP	
			04/19/94	37.00 U	Y					
						37.00	U	Y	DUP	
			07/28/94	58.20 B	Y					-1.03
						58.80	B	Y	DUP	
			10/10/94	59.30 B	Y					-0.17
						59.40	B	Y	DUP	
		6087	02/14/94	69.70 B	V					1.59
						68.60	B	V	DUP	
			04/14/94	63.20 B	V					-29.88
						85.40	B	V	DUP	
		6887	01/27/94	90.40 B	V					-2.30

(* in RPD denotes multiple REAL sample results)

Relative Percent Differences

DSMETCLP	BARIUM						92.50	B	V	DUP	
			04/15/94	86.40	B	V					-6.39
							92.10	B	V	DUP	
		71893	03/15/94	150.00	B	V					-21.16
							150.00	B	V	DUP	
							221.00		V	DUP	
		B410589	10/11/94	48.63	B	Y					200.00*
							48.70	B	Y	REAL	
		P114989	09/12/94	84.51	B	Y					200.00*
							83.20	B	Y	REAL	
		P415889	08/15/94	79.16	B	Z					200.00*
							75.00	B	V	REAL	
		P416189	02/17/94	183.00	B	V					-11.10
							178.00	B	V	DUP	
							231.00		V	DUP	
			05/05/94	143.00	B	V					-21.53
							148.00	B	V	DUP	
							207.00		V	DUP	
			08/23/94	194.00	B	V					-20.16
							197.00	B	V	DUP	
							278.00		V	DUP	
	BERYLLIUM	02691	05/18/94	1.00	U	V					
							1.00	U	V	DUP	
		3086	10/06/94	1.00	U	Y					200.00*
							1.00	U	Y	REAL	
		46292	03/03/94	1.00	U	V					
							1.00	U	V	DUP	
			04/21/94	1.00	U	V					
							1.00	U	V	DUP	
			08/16/94	1.00	U	Z					*
							1.00	U	V	REAL	
							1.00	U	V	DUP	
		4786	01/24/94	1.00	U	V					
							1.00	U	V	DUP	
			06/13/94	1.00	U	V					
							1.00	U	V	DUP	
		5086	02/08/94	1.00	U	V					
							1.00	U	V	DUP	
			04/19/94	1.00	U	Y					

Relative Percent Differences

DSMETCLP	BERYLLIUM					1.00	U	Y	DUP	
			07/28/94	1.00 U	Y					
						1.00	U	Y	DUP	
			10/10/94	1.00 U	Y					
						1.00	U	Y	DUP	
		6087	02/14/94	1.00 U	V					
						1.00	U	V	DUP	
			04/14/94	1.00 U	V					
						1.00	U	V	DUP	
		6887	01/27/94	1.00 U	V					
						1.00	U	V	DUP	
			04/15/94	1.00 U	V					
						1.00	U	V	DUP	
		71893	03/15/94	1.00 U	V					
						1.00	U	V	DUP	
						1.00	U	V	DUP	
		B410589	10/11/94	1.00 U	Y					200.00*
						1.00	U	Y	REAL	
		P114989	09/12/94	1.00 U	Y					200.00*
						1.00	U	Y	REAL	
		P415889	08/15/94	1.00 U	Z					200.00*
						1.00	U	V	REAL	
		P416189	02/17/94	1.00 U	V					
						1.00	U	V	DUP	
						1.00	U	V	DUP	
			05/05/94	1.00 U	V					
						1.00	U	V	DUP	
						1.00	U	V	DUP	
			08/23/94	1.00 U	V					
						1.00	U	V	DUP	
						1.00	U	V	DUP	
	CADMIUM	02691	05/18/94	4.00 U	V					
						4.00	U	V	DUP	
		3086	10/06/94	4.00 U	Y					200.00*
						4.00	U	Y	REAL	
		46292	03/03/94	4.00 U	V					
						4.00	U	V	DUP	
			04/21/94	4.00 U	V					
						4.00	U	V	DUP	

Relative Percent Differences

DSMETCLP	CADMIUM		08/16/94	3.00 U	Z					*
						3.00	U	V	REAL	
						3.00	U	V	DUP	
		4786	01/24/94	2.00 U	V					
						2.00	U	V	DUP	
			06/13/94	4.00 U	V					
						4.00	U	V	DUP	
		5086	02/08/94	2.00 U	V					
						2.00	U	V	DUP	
			04/19/94	4.00 U	Y					
						4.00	U	Y	DUP	
			07/28/94	3.00 U	Y					
						3.00	U	Y	DUP	
			10/10/94	4.00 U	Y					
						4.00	U	Y	DUP	
		6087	02/14/94	2.10 B	V					4.88
						2.00	U	V	DUP	
			04/14/94	3.00 U	V					
						3.00	U	V	DUP	
		6887	01/27/94	4.00 U	V					
						4.00	U	V	DUP	
			04/15/94	3.00 U	V					
						3.00	U	V	DUP	
		71893	03/15/94	2.00 U	V					
						2.00	U	V	DUP	
						2.00	U	V	DUP	
		B410589	10/11/94	4.00 U	Y					200.00*
						4.00	U	Y	REAL	
		P114989	09/12/94	3.00 U	Y					200.00*
						3.00	U	Y	REAL	
		P415889	08/15/94	3.00 U	Z					200.00*
						3.00	U	V	REAL	
		P416189	02/17/94	4.00 U	V					
						4.00	U	V	DUP	
						4.00	U	V	DUP	
			05/05/94	3.00 U	V					
						3.00	U	V	DUP	
						3.00	U	V	DUP	
			08/23/94	3.00 U	V					

(* in RPD denotes multiple REAL sample results)

Relative Percent Differences

DSMETCLP	CADMIUM						3.00	U	V	DUP		
							3.00	U	V	DUP		
	CHROMIUM	02691	05/18/94	5.00	U	V						
							5.00	U	V	DUP		
		3086	10/06/94	3.00	U	Y					200.00	*
							3.00	U	Y	REAL		
		46292	03/03/94	3.00	U	V						
							3.00	U	V	DUP		
			04/21/94	5.00	U	V						
							5.00	U	V	DUP		
			08/16/94	4.00	U	Z						*
							4.00	U	V	REAL		
							4.00	U	V	DUP		
		4786	01/24/94	4.00	U	V						
							4.00	U	V	DUP		
			06/13/94	5.00	U	V						
							5.00	U	V	DUP		
		5086	02/08/94	4.00	U	V						
							4.00	U	V	DUP		
			04/19/94	5.00	U	Y						
							5.00	U	Y	DUP		
			07/28/94	2.00	U	Y						
							2.00	U	Y	DUP		
			10/10/94	3.00	U	Y						
							3.00	U	Y	DUP		
		6087	02/14/94	4.00	U	V						
							4.00	U	V	DUP		
			04/14/94	2.00	U	V					-127.93	
							9.10	B	V	DUP		
		6887	01/27/94	3.00	U	V						
							3.00	U	V	DUP		
			04/15/94	2.00	U	V						
							2.00	U	V	DUP		
		71893	03/15/94	4.00	U	V					-26.09	
							4.00	U	V	DUP		
							6.40	B	V	DUP		
		B410589	10/11/94	3.00	U	Y					200.00	*
							3.00	U	Y	REAL		
		P114989	09/12/94	2.00	U	Y					200.00	*

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Relative Percent Differences

DSMETCLP	CHROMIUM					2.00 U	Y	REAL	
		P415889	08/15/94	4.00 U	Z				200.00 *
						4.00 U	V	REAL	
		P416189	02/17/94	3.00 U	V				-68.85
						3.00 U	V	DUP	
						9.30 B	V	DUP	
			05/05/94	2.00 U	V				-109.60
						2.00 U	V	DUP	
						11.70	V	DUP	
			08/23/94	2.00 U	V				-119.60
						2.00 U	V	DUP	
						13.90	V	DUP	
	COBALT	02691	05/18/94	11.00 U	V				
						11.00 U	V	DUP	
		3086	10/06/94	6.00 U	Y				200.00 *
						6.00 U	Y	REAL	
		46292	03/03/94	4.00 U	V				
						4.00 U	V	DUP	
			04/21/94	11.00 U	V				
						11.00 U	V	DUP	
			08/16/94	8.00 U	Z				*
						8.00 U	V	REAL	
						8.00 U	V	DUP	
		4786	01/24/94	6.00 U	V				
						6.00 U	V	DUP	
			06/13/94	11.00 U	V				
						11.00 U	V	DUP	
		5086	02/08/94	6.00 U	V				
						6.00 U	V	DUP	
			04/19/94	11.00 U	Y				
						11.00 U	Y	DUP	
			07/28/94	3.00 U	Y				
						3.00 U	Y	DUP	
			10/10/94	6.00 U	Y				
						6.00 U	Y	DUP	
		6087	02/14/94	6.00 U	V				
						6.00 U	V	DUP	
			04/14/94	2.00 U	V				-33.33
						2.80 B	V	DUP	

Relative Percent Differences

DSMETCLP	COBALT	6887	01/27/94	4.00	U	V					
							4.00	U	V	DUP	
			04/15/94	2.00	U	V					
							2.00	U	V	DUP	
		71893	03/15/94	6.00	U	V					-15.38
							6.00	U	V	DUP	
							8.00	U	J	DUP	
		B410589	10/11/94	6.00	U	Y					200.00*
							6.00	U	Y	REAL	
		P114989	09/12/94	3.00	U	Y					200.00*
							3.00	U	Y	REAL	
		P415889	08/15/94	8.00	U	Z					200.00*
							8.00	U	V	REAL	
		P416189	02/17/94	4.00	U	V					-27.96
							4.00	U	V	DUP	
							6.60	B	V	DUP	
			05/05/94	2.00	U	V					-81.48
							2.20	U	J	DUP	
							7.30	U	J	DUP	
			08/23/94	3.00	U	V					-89.40
							3.00	U	V	DUP	
							12.70	B	V	DUP	
	COPPER	02691	05/18/94	5.00	U	V					
							5.00	U	V	DUP	
		3086	10/06/94	3.00	U	Y					200.00*
							3.00	U	Y	REAL	
		46292	03/03/94	3.60	B	V					-5.41
							3.80	B	V	DUP	
			04/21/94	5.00	U	V					
							5.00	U	V	DUP	
			08/16/94	2.00	U	Z					*
							2.00	U	V	REAL	
							2.00	U	V	DUP	
		4786	01/24/94	4.00	U	V					
							4.00	U	V	DUP	
			06/13/94	5.00	U	V					
							5.00	U	V	DUP	
		5086	02/08/94	4.00	U	V					
							4.00	U	V	DUP	

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Relative Percent Differences

DSMETCLP	COPPER		04/19/94	5.00 U	Y						
						5.00	U	Y	DUP		
			07/28/94	2.20 B	Y						9.52
						2.00	U	Y	DUP		
			10/10/94	3.00 U	Y						
						3.00	U	Y	DUP		
		6087	02/14/94	4.00 U	V						
						4.00	U	V	DUP		
			04/14/94	2.90 B	V						-123.68
						12.30	B	V	DUP		
		6887	01/27/94	2.00 U	V						
						2.00	U	V	DUP		
			04/15/94	1.00 U	V						
						1.00	U	V	DUP		
		71893	03/15/94	4.00 U	V						-95.42
						4.00	U	V	DUP		
						18.60	B	V	DUP		
		B410589	10/11/94	3.00 U	Y						200.00*
						3.00	U	Y	REAL		
		P114989	09/12/94	2.17 B	Y						200.00*
						2.20	B	Y	REAL		
		P415889	08/15/94	2.00 U	Z						200.00*
						2.00	U	J	REAL		
		P416189	02/17/94	2.00 U	V						-111.11
						2.00	U	V	DUP		
						12.00	B	V	DUP		
			05/05/94	1.00 U	V						-149.04
						1.00	U	V	DUP		
						12.70	B	V	DUP		
			08/23/94	2.00 U	V						-131.33
						2.00	U	V	DUP		
						17.30	B	V	DUP		
	VANADIUM	02691	05/18/94	10.00 U	V						
						10.00	U	V	DUP		
		3086	10/06/94	3.00 U	Y						200.00*
						3.00	U	Y	REAL		
		46292	03/03/94	3.00 U	V						
						3.00	U	V	DUP		
			04/21/94	10.00 U	V						

Relative Percent Differences

DSMETCLP VANADIUM					10.00 U	V	DUP	
		08/16/94	4.00 U	Z				*
					4.00 U	V	REAL	
					4.00 U	V	DUP	
	4786	01/24/94	6.00 U	V				
					6.00 U	V	DUP	
		06/13/94	10.00 U	V				
					10.00 U	V	DUP	
	5086	02/08/94	6.00 U	V				
					6.00 U	V	DUP	
		04/19/94	10.00 U	Y				
					10.00 U	Y	DUP	
		07/28/94	2.90 B	Y				36.73
					2.00 U	Y	DUP	
		10/10/94	3.00 U	Y				
					3.00 U	Y	DUP	
	6087	02/14/94	6.00 U	V				
					6.00 U	V	DUP	
		04/14/94	2.00 U	V				-127.93
					9.10 B	V	DUP	
	6887	01/27/94	3.00 U	V				
					3.00 U	V	DUP	
		04/15/94	2.00 U	V				
					2.00 U	V	DUP	
	71893	03/15/94	6.00 U	V				-60.06
					6.00 U	V	DUP	
					16.30 B	V	DUP	
	B410589	10/11/94	3.00 U	Y				200.00 *
					3.00 U	Y	REAL	
	P114989	09/12/94	2.00 U	Y				200.00 *
					2.00 U	Y	REAL	
	P415889	08/15/94	4.00 U	Z				200.00 *
					4.00 U	V	REAL	
	P416189	02/17/94	3.00 U	V				-119.19
					3.00 U	V	DUP	
					20.70 B	V	DUP	
		05/05/94	2.00 U	V				-149.53
					2.00 U	V	DUP	
					25.70 B	V	DUP	

Relative Percent Differences

DSMETCLP	VANADIUM		08/23/94	2.40 B	V						-152.12
						2.50	B	V	DUP		
						32.80	B	V	DUP		
	ZINC	02691	05/18/94	5.00 U	V						
						5.00	U	V	DUP		
		3086	10/06/94	4.16 B	Y						200.00*
						6.50	B	Y	REAL		
		46292	03/03/94	13.70 B	V						14.06
						11.90	B	V	DUP		
			04/21/94	5.00 U	V						
						5.00	U	V	DUP		
			08/16/94	3.00 U	Z						*
						3.00	U	V	REAL		
						3.00	U	V	DUP		
		4786	01/24/94	3.00 U	V						
						3.00	U	V	DUP		
			06/13/94	5.00 U	V						
						5.00	U	V	DUP		
		5086	02/08/94	3.40 B	V						2.99
						3.30	B	V	DUP		
			04/19/94	5.00 U	Y						
						5.00	U	Y	DUP		
			07/28/94	7.10 B	Y						-17.95
						8.50	B	Y	DUP		
			10/10/94	3.00 U	Y						
						3.00	U	Y	DUP		
		6087	02/14/94	15.10 U	J						38.74
						10.20	U	J	DUP		
			04/14/94	17.30 U	J						-124.62
						74.50		V	DUP		
		6887	01/27/94	9.00 U	V						
						9.00	U	V	DUP		
			04/15/94	8.70 U	J						-33.49
						12.20	U	J	DUP		
		71893	03/15/94	5.90 U	J						-105.41
						5.70	U	J	DUP		
						32.40		V	DUP		
		B410589	10/11/94	3.00 U	Y						200.00*
						3.00	U	Y	REAL		

Relative Percent Differences

DSMETCLP	ZINC	P114989	09/12/94	27.69		Y					200.00 *
							12.90	B	Y	REAL	
		P415889	08/15/94	3.00	U	Z					200.00 *
							3.00	U	V	REAL	
		P416189	02/17/94	11.80	B	V					-121.53
							19.00	B	V	DUP	
							77.70	*	J	DUP	
			05/05/94	4.70	U	J					-137.02
							7.00	U	J	DUP	
							43.30	U	J	DUP	
			08/23/94	6.20	U	J					-129.34
							11.10	U	J	DUP	
							46.70		V	DUP	
	CALCIUM	02691	05/18/94	85700.00		V					2.24
							83800.00		V	DUP	
		3086	10/06/94	57750.91		Y					200.00 *
							260000.00		Y	REAL	
		46292	03/03/94	19900.00		V					-0.50
							20000.00		V	DUP	
			04/21/94	22000.00		V					3.23
							21300.00		V	DUP	
			08/16/94	20350.86		Z					0.62 *
							20100.00		V	REAL	
							20100.00		V	DUP	
		4786	01/24/94	21600.00		V					2.82
							21000.00		V	DUP	
			06/13/94	19500.00		V					-1.53
							19800.00		V	DUP	
		5086	02/08/94	34500.00		V					3.24
							33400.00		V	DUP	
			04/19/94	19000.00		Y					-0.52
							19100.00		Y	DUP	
			07/28/94	33000.00		Y					-0.60
							33200.00		Y	DUP	
			10/10/94	33600.00		Y					-0.30
							33700.00		Y	DUP	
		6087	02/14/94	24700.00		V					2.04
							24200.00		V	DUP	
			04/14/94	22900.00		V					-5.52

Relative Percent Differences

DSMETCLP	CALCIUM						24200.00		V	DUP	
		6887	01/27/94	32700.00		V					-0.91
							33000.00		V	DUP	
			04/15/94	33300.00		V					0.90
							33000.00		V	DUP	
		71893	03/15/94	46000.00		V					-3.94
							46300.00		V	DUP	
							49400.00		V	DUP	
		B410589	10/11/94	39067.91		Y					200.00 *
							38900.00		Y	REAL	
		P114989	09/12/94	21134.71		Y					200.00 *
							21000.00		Y	REAL	
		P415889	08/15/94	50389.72		Z					200.00 *
							48600.00		V	REAL	
		P416189	02/17/94	106000.00		V					0.95
							103000.00		V	DUP	
							107000.00		V	DUP	
			05/05/94	85800.00		V					-2.65
							88900.00		V	DUP	
							87300.00		V	DUP	
			08/23/94	111000.00		V					-2.23
							113000.00		V	DUP	
							114000.00		V	DUP	
	SELENIUM	02691	05/18/94	3.00	UW	V					-6.45
							3.20	B	V	DUP	
		3086	10/06/94	3.00	U	Y					200.00 *
							3.00	UWN	Y	REAL	
		46292	03/03/94	2.00	U	V					
							2.00	U	V	DUP	
			04/21/94	3.00	U	V					
							3.00	U	V	DUP	
			08/16/94	3.00	U	Z					*
							3.00	U	V	REAL	
							3.00	U	V	DUP	
		4786	01/24/94	3.00	U	V					
							3.00	UW	V	DUP	
			06/13/94	3.00	U	V					
							3.00	U	V	DUP	
		5086	02/08/94	3.00	UWN	J					

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Relative Percent Differences

DSMETCLP	SELENIUM					3.00	UWN	J	DUP	
			04/19/94	3.00 U	Y					
						3.00	U	Y	DUP	
			07/28/94	2.00 U	Y					
						2.00	U	Y	DUP	
			10/10/94	3.00 UN	Y					
						3.00	UN	Y	DUP	
		6087	02/14/94	3.00 U	V					
						3.00	U	V	DUP	
			04/14/94	2.00 U	V					
						2.00	U	V	DUP	
		6887	01/27/94	2.00 U	V					
						2.00	U	V	DUP	
			04/15/94	2.00 U	V					
						2.00	U	V	DUP	
		71893	03/15/94	3.00 U	V					
						3.00	U	V	DUP	
						3.00	UN	J	DUP	
		B410589	10/11/94	3.00 U	Y					200.00*
						3.00	U	Y	REAL	
		P114989	09/12/94	2.00 U	Y					200.00*
						2.00	U	Y	REAL	
		P415889	08/15/94	3.00 U	Z					200.00*
						3.00	U	V	REAL	
		P416189	02/17/94	2.00 U	V					
						2.00	U	V	DUP	
						2.00	U	V	DUP	
			05/05/94	1.00 U	V					
						1.00	U	V	DUP	
						1.00	UW	J	DUP	
			08/23/94	2.20 U	J					9.52
						2.00	U	V	DUP	
						2.00	U	V	DUP	
METADD	LITHIUM	B206789	10/12/94	214.11	Y					200.00*
						225.00		Y	REAL	
		P114989	09/12/94	14.08 B	Y					200.00*
						13.90	B	Y	REAL	
		P415889	08/15/94	26.92 B	Z					200.00*
						27.70	B	V	REAL	

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Relative Percent Differences

METADD	MOLYBDENUM	B206789	10/12/94	15.00 U	Y				200.00*
						15.00 U	Y	REAL	
		P114989	09/12/94	5.71 B	Y				200.00*
						6.40 B	Y	REAL	
		P415889	08/15/94	14.00 U	Z				200.00*
						14.00 U	V	REAL	
	SILICON	B206789	10/12/94	5716.00	Y				200.00*
						6040.00	Y	REAL	
		P114989	09/12/94	34260.26	Y				200.00*
						39900.00	Y	REAL	
		P415889	08/15/94	77340.00	Z				200.00*
						79100.00	J	REAL	
	STRONTIUM	B206789	10/12/94	1380.88	Y				200.00*
						1460.00	Y	REAL	
		P114989	09/12/94	222.17	Y				200.00*
						226.00	Y	REAL	
		P415889	08/15/94	350.91	Z				200.00*
						357.00	V	REAL	
	TIN	B206789	10/12/94	37.00 U	Y				200.00*
						37.00 U	Y	REAL	
		P114989	09/12/94	12.00 U	Y				200.00*
						12.00 U	Y	REAL	
		P415889	08/15/94	43.45 B	Z				200.00*
						40.50 B	V	REAL	
	CESIUM	B206789	10/12/94	46.00 B	Y				200.00*
						45.00 B	Y	REAL	
		P114989	09/12/94	43.00 U	Y				200.00*
						43.00 U	Y	REAL	
		P415889	08/15/94	20.00 U	Z				200.00*
						20.00 U	V	REAL	
SMETCLP	ALUMINUM	B206789	10/12/94	229.66	Y				200.00*
						245.00	Y	REAL	
		P114989	09/12/94	12268.31	Y				200.00*
						14900.00	Y	REAL	
		P415889	08/15/94	35896.72	Z				200.00*
						37200.00	V	REAL	
	IRON	B206789	10/12/94	280.06	Y				200.00*
						279.00	Y	REAL	
		P114989	09/12/94	7825.18	Y				200.00*

Relative Percent Differences

SMETCLP	IRON						8810.00		Y	REAL	
		P415889	08/15/94	1055.77		Z					200.00*
							21700.00	N*	J	REAL	
	LEAD	B206789	10/12/94	2.00	U	Y					200.00*
							2.00	UW	Y	REAL	
		P114989	09/12/94	17.20		Y					200.00*
							17.40		Y	REAL	
		P415889	08/15/94	10.20		Z					200.00*
							10.00		V	REAL	
	MAGNESIUM	B206789	10/12/94	41006.17		Y					200.00*
							43400.00		Y	REAL	
		P114989	09/12/94	7176.86		Y					200.00*
							7510.00		Y	REAL	
		P415889	08/15/94	16016.70		Z					200.00*
							16400.00		V	REAL	
	MANGANESE	B206789	10/12/94	7.99	B	Y					200.00*
							7.90	B	Y	REAL	
		P114989	09/12/94	84.39		Y					200.00*
							86.80		Y	REAL	
		P415889	08/15/94	332.97		Z					200.00*
							339.00		V	REAL	
	MERCURY	B206789	10/12/94	0.20	U	Y					200.00*
							0.20	U	Y	REAL	
		P114989	09/12/94	0.20	U	Y					200.00*
							0.20	U	Y	REAL	
		P415889	08/15/94	0.20	U	Z					200.00*
							0.20	U	V	REAL	
	NICKEL	B206789	10/12/94	10.00	U	Y					200.00*
							11.10	B	Y	REAL	
		P114989	09/12/94	11.08	B	Y					200.00*
							10.80	B	Y	REAL	
		P415889	08/15/94	33.75	B	Z					200.00*
							28.00	U	J	REAL	
	POTASSIUM	B206789	10/12/94	3598.71	B	Y					200.00*
							3710.00	B	Y	REAL	
		P114989	09/12/94	2574.62	B	Y					200.00*
							2560.00	B	Y	REAL	
		P415889	08/15/94	5263.45		Z					200.00*
							5170.00		V	REAL	

Relative Percent Differences

SMETCLP	SILVER	B206789	10/12/94	4.00	U	Y					200.00*
							4.00	U	Y	REAL	
		P114989	09/12/94	2.00	U	Y					200.00*
							2.50	B	Y	REAL	
		P415889	08/15/94	4.00	U	Z					200.00*
							4.00	U	V	REAL	
	SODIUM	B206789	10/12/94	37675.32		Y					200.00*
							145000.00		Y	REAL	
		P114989	09/12/94	18733.68		Y					200.00*
							18600.00		Y	REAL	
		P415889	08/15/94	14290.60		Z					200.00*
							14600.00		V	REAL	
	THALLIUM	B206789	10/12/94	3.00	U	Y					200.00*
							3.00	UWN	Y	REAL	
		P114989	09/12/94	1.00	U	Y					200.00*
							1.00	UWN	Y	REAL	
		P415889	08/15/94	4.00	U	Z					200.00*
							4.00	U	V	REAL	
	ANTIMONY	B206789	10/12/94	50.00	U	Y					200.00*
							58.00	B	Y	REAL	
		P114989	09/12/94	17.22	B	Y					200.00*
							13.00	UN	Y	REAL	
		P415889	08/15/94	46.00	U	Z					200.00*
							46.00	U	V	REAL	
	ARSENIC	B206789	10/12/94	3.00	U	Y					200.00*
							3.00	U	Y	REAL	
		P114989	09/12/94	2.30	B	Y					200.00*
							2.00	UW	Y	REAL	
		P415889	08/15/94	3.00	U	Z					200.00*
							3.00	UN	J	REAL	
	BARIUM	B206789	10/12/94	21.13	B	Y					200.00*
							22.00	B	Y	REAL	
		P114989	09/12/94	216.72		Y					200.00*
							222.00		Y	REAL	
		P415889	08/15/94	239.95		Z					200.00*
							245.00		V	REAL	
	BERYLLIUM	B206789	10/12/94	1.00	U	Y					200.00*
							1.00	U	Y	REAL	
		P114989	09/12/94	1.00	U	Y					200.00*

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Relative Percent Differences

SMETCLP	BERYLLIUM					1.00	U	Y	REAL	
		P415889	08/15/94	1.55 B	Z					200.00*
						1.60	B	V	REAL	
	CADMIUM	B206789	10/12/94	4.00 U	Y					200.00*
						4.00	U	Y	REAL	
		P114989	09/12/94	3.00 U	Y					200.00*
						3.00	U	Y	REAL	
		P415889	08/15/94	3.00 U	Z					200.00*
						3.00	U	V	REAL	
	CHROMIUM	B206789	10/12/94	3.54 B	Y					200.00*
						3.00	U	Y	REAL	
		P114989	09/12/94	9.76 B	Y					200.00*
						11.10		Y	REAL	
		P415889	08/15/94	42.34	Z					200.00*
						42.60	U	J	REAL	
	COBALT	B206789	10/12/94	6.00 U	Y					200.00*
						6.00	U	Y	REAL	
		P114989	09/12/94	5.49 B	Y					200.00*
						4.90	B	Y	REAL	
		P415889	08/15/94	14.20 B	Z					200.00*
						9.40	U	J	REAL	
	COPPER	B206789	10/12/94	6.61 B	Y					200.00*
						8.00	B	Y	REAL	
		P114989	09/12/94	12.10 B	Y					200.00*
						14.20	B	Y	REAL	
		P415889	08/15/94	32.63	Z					200.00*
						29.50	U	J	REAL	
	VANADIUM	B206789	10/12/94	3.00 U	Y					200.00*
						3.00	U	Y	REAL	
		P114989	09/12/94	22.69 B	Y					200.00*
						26.30	B	Y	REAL	
		P415889	08/15/94	47.99 B	Z					200.00*
						48.90	B	V	REAL	
	ZINC	B206789	10/12/94	16.72 B	Y					200.00*
						24.90		Y	REAL	
		P114989	09/12/94	48.84	Y					200.00*
						58.80		Y	REAL	
		P415889	08/15/94	94.98	Z					200.00*
						95.40		V	REAL	

Relative Percent Differences

SMETCLP	CALCIUM	B206789	10/12/94	53884.26	Y					200.00*
						164000.00		Y	REAL	
		P114989	09/12/94	25228.24	Y					200.00*
						25600.00		Y	REAL	
		P415889	08/15/94	54171.07	Z					200.00*
						54600.00		V	REAL	
	SELENIUM	B206789	10/12/94	611.70	Y					200.00*
						596.00		Y	REAL	
		P114989	09/12/94	2.00 U	Y					200.00*
						2.00	U	Y	REAL	
		P415889	08/15/94	3.00 U	Z					200.00*
						3.00	UN	J	REAL	

 (* in RPD denotes multiple REAL sample results)

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
DRADS	PLUTONIUM-239/240	1786	07/08/94	0.00	U	V					*
							0.00	U	A	REAL	
		46192	04/13/94	0.00	U	V					*
							0.00	U	V	REAL	
		46292	04/21/94	0.00	U	V					
							0.00	U	V	DUP	
							0.00	BJ	V	DUP	
		4786	07/27/94	0.00	J	V					
							0.00	J	V	DUP	
							0.00	J	V	DUP	
		51094	09/01/94	0.00	U	Y					*
							0.00	U	Y	REAL	
		70093	03/04/94	0.00	U	V					200.00*
							0.01	J	V	REAL	
			03/07/94	0.00	U	V					200.00*
							0.01	J	V	REAL	
			08/29/94	0.00		Y					*
							0.00		Y	REAL	
		70293	08/22/94	-0.01	Y	Y					*
							0.01		Y	REAL	
		70593	05/23/94	0.00	U	V					*
							0.00	U	V	REAL	
		70693	04/28/94	0.00	J	V					*
							0.00	U	V	REAL	
		71893	03/15/94	0.00	U	V					
							0.00	BJ	V	DUP	
							0.00	U	V	DUP	
		72093	03/10/94	0.02	U	V					200.00*
							0.02	U	V	REAL	
		P416189	02/17/94	0.00	U	V					
							0.00	U	V	DUP	
							0.00	U	V	DUP	
			05/05/94	0.00	U	V					
							0.00	U	V	DUP	
							0.00	U	V	DUP	

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Relative Percent Differences

DRADS	PLUTONIUM-239/240	P416389	02/10/94	0.00 U	V				*
						0.00 U	V	REAL	
	GROSS ALPHA	4786	06/13/94	1.10 J	Y				-8.70
						1.20 J	Y	DUP	
		70593	05/23/94	2.10	Z				200.00 *
						1.70 J	Y	REAL	
	CESIUM-137	4786	07/27/94	0.10 J	Y				-580.95
						-0.21 J	Y	DUP	
						-0.20 J	Y	DUP	
	URANIUM-233,-234	02691	05/18/94	5.88	V				22.31
						4.70	V	DUP	
		46292	03/03/94	0.19 J	V				-41.67
						0.29 J	V	DUP	
			04/21/94	0.19 J	V				5.41
						0.18 U	V	DUP	
		46392	03/02/94	0.80	V				200.00 *
						1.10	V	REAL	
		4786	01/24/94	1.10	V				103.45
						0.35	V	DUP	
			06/13/94	0.27 BJ	Y				7.69
						0.25 J	Y	DUP	
			07/27/94	0.40	V				-68.85
						0.23	V	DUP	
						1.41	V	DUP	
		4986	04/14/94	0.00 U	V				200.00 *
						0.06 J	V	REAL	
		5086	02/08/94	0.79	A				79.65
						0.34 J	A	DUP	
			04/19/94	0.87	V				2.33
						0.85	V	DUP	
		51494	08/29/94	0.79	Y				200.00 *
						0.74	Y	REAL	
		6087	02/14/94	0.56 BJ	V				33.33
						0.40 J	V	DUP	
			04/14/94	0.14 J	V				54.55
						0.08 U	V	DUP	
		6587	02/28/94	0.16 J	Z				200.00 *
						0.12 J	V	REAL	
		6887	01/27/94	0.37 BJ	A				-54.90

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Relative Percent Differences

DRADS	URANIUM-233,-234						0.65	B	A	DUP	
			04/15/94	0.15	U	V					228.57
							-0.01	U	V	DUP	
		70293	08/22/94	3.85		Y					200.00 *
							4.04		Y	REAL	
		70693	03/04/94	0.03	U	V					200.00 *
							0.09	J	V	REAL	
			04/28/94	-0.01	U	V					200.00 *
							-0.01	U	V	REAL	
		70893		4.10		V					200.00 *
							3.60		V	REAL	
		71693	06/09/94	0.20		Y					200.00 *
							0.28		Y	REAL	
		71893	03/15/94	0.06	U	V					-85.71
							0.15	U	V	DUP	
		P415889	02/14/94	0.49	BJ	V					200.00 *
							0.42	BJ	V	REAL	
		P416189	02/17/94	0.56	J	V					-38.30 *
							0.77		V	REAL	
							0.76		V	DUP	
							1.20	B	J	DUP	
			05/05/94	0.23	J	V					-70.42
							0.16	U	V	DUP	
							0.80		A	DUP	
		P416389	02/10/94	0.92	B	J					200.00 *
							1.00	B	J	REAL	
		P416589	05/05/94	0.41	J	V					200.00 *
							0.90		V	REAL	
	STRONTIUM-89,90	02691	05/18/94	0.14		V					-573.33
							-0.29		V	DUP	
		1786	02/07/94	0.60	U	V					200.00 *
							0.13	U	V	REAL	
							0.05	U	V	LR	
		46292	03/03/94	0.36	BJ	A					127.27
							0.08	U	A	DUP	
			04/21/94	0.21	U	V					27.03
							0.16	U	V	DUP	
		4786	01/24/94	-0.14		A					
							0.14		A	DUP	

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Relative Percent Differences

DRADS	STRONTIUM-89,90		06/13/94	0.11 U	Y						31.58
						0.08	U	Y	DUP		
			07/27/94	-0.03 J	V						-243.64
						0.35	J	V	DUP		
						0.26	J	V	DUP		
		5086	02/08/94	0.00 U	V						-200.00
						-0.02	U	V	DUP		
			04/19/94	-0.05	V						-2200.00
						0.06		V	DUP		
		6087	02/14/94	-0.01 U	V						-66.67
						-0.02	U	V	DUP		
			04/14/94	0.13 U	V						-73.17
						0.28	BJ	V	DUP		
		6587	02/28/94	0.32 U	A						200.00*
						0.68	BJ	A	REAL		
		6887	01/27/94	-0.17 U	V						418.18
						0.06	U	V	DUP		
			04/15/94	0.03 U	V						-152.00
						0.22	BJ	V	DUP		
		70493	08/25/94	-0.07	Y						200.00*
						0.06		Y	REAL		
		70593	05/23/94	0.24 U	Z						200.00*
						0.09	U	Y	REAL		
			08/30/94	0.40	Y						200.00*
						0.30		Y	REAL		
		70693	03/04/94	0.24 BJ	V						200.00*
						0.11	U	V	REAL		
			04/28/94	0.14 U	V						200.00*
						-0.05	U	V	REAL		
		71893	03/15/94	0.27 U	V						76.92
						0.12	U	V	DUP		
		B206489	02/28/94	0.17 U	A						200.00*
						0.22	U	A	REAL		
		B207089	01/27/94	-0.54 U	V						200.00*
						-0.28	U	V	REAL		
		P207389	04/15/94	0.35 U	V						200.00*
						0.41	J	V	REAL		
		P415889	02/14/94	-0.09 U	V						200.00*
						0.04	U	V	REAL		

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Relative Percent Differences

DRADS	STRONTIUM-89,90	P416189	02/17/94	-0.09	U	V					-300.00 *
							0.14	U	V	REAL	
							-0.15	U	V	DUP	
							-0.10	U	V	DUP	
			05/05/94	0.16	U	V					-8.96
							0.12	U	V	DUP	
							0.23	U	Y	DUP	
		P416389	02/10/94	-0.10	U	V					200.00 *
							-0.17	U	V	REAL	
		P416589	05/05/94	0.19	U	V					200.00 *
							0.26	U	V	REAL	
	GROSS ALPHA	02691	05/18/94	3.83	C	V					-40.91
							5.80	C	V	DUP	
		46292	03/03/94	1.30	J	V					8.00
							1.20	J	V	DUP	
			04/21/94	0.51	J	V					-27.12
							0.67	J	V	DUP	
		46392	03/02/94	2.70		V					200.00 *
							2.10		V	REAL	
		4786	01/24/94	0.64		V					124.05
							0.15		V	DUP	
			07/27/94	0.72		V					-171.11
							0.60		V	DUP	
							17.90		V	DUP	
		4986	04/14/94	0.41	J	V					200.00 *
							0.33	U	V	REAL	
		5086	02/08/94	0.61	J	V					-57.31
							1.10	J	V	DUP	
			04/19/94	0.33		V					64.00
							0.17		V	DUP	
		51494	08/29/94	3.60		Y					200.00 *
							3.40		Y	REAL	
		6087	02/14/94	0.04	U	V					-167.35
							0.45	U	V	DUP	
			04/14/94	0.43	J	V					-24.49
							0.55	J	V	DUP	
		6587	02/28/94	0.85	BJ	A					200.00 *
							0.82	BJ	A	REAL	
		6887	01/27/94	0.99	J	V					121.95

Relative Percent Differences

DRADS	GROSS ALPHA					0.24 U	V	DUP	
			04/15/94	0.41 U	V				-9.30
						0.45 U	V	DUP	
		70593	08/30/94	0.00	Y				200.00*
						1.00	Y	REAL	
		70693	03/04/94	0.43 J	V				200.00*
						0.32 U	V	REAL	
			04/28/94	1.80 BJ	A				200.00*
						0.94 BJ	A	REAL	
		70893		4.90	V				200.00*
						5.60	V	REAL	
		71893	03/15/94	1.40 J	V				53.39
						0.81 J	V	DUP	
		B110989	01/25/94	1.00 J	V				200.00*
						0.59 J	V	REAL	
		P115089	02/09/94	0.75 J	V				200.00*
						1.00 J	V	REAL	
		P415889	02/14/94	0.82 J	V				200.00*
						0.55 J	V	REAL	
		P416189	02/17/94	1.10 J	V				-168.04*
						0.88 J	V	REAL	
						1.80 J	V	DUP	
						21.00	V	DUP	
			05/05/94	0.92 J	V				-151.71
						1.40 J	V	DUP	
						12.00	V	DUP	
		P416389	02/10/94	1.10 J	V				200.00*
						1.30 J	V	REAL	
		P416589	05/05/94	2.00	V				200.00*
						1.40 J	V	REAL	
	GROSS BETA	02691	05/18/94	4.08 C	V				-35.65
						5.85 C	V	DUP	
		46292	03/03/94	2.30 J	V				-16.00
						2.70 J	V	DUP	
			04/21/94	2.10 U	V				87.67
						0.82 U	V	DUP	
		46392	03/02/94	3.90 J	A				200.00*
						2.40 J	V	REAL	
		4786	01/24/94	1.20	V				-22.22

Relative Percent Differences

DRADS	GROSS BETA					1.50		V	DUP	
			06/13/94	2.10 J	Y					-38.46
						3.10	J	Y	DUP	
			07/27/94	1.45 J	V					-147.42
						1.86		V	DUP	
						17.30		V	DUP	
		4986	04/14/94	2.30 J	V					200.00 *
						2.30	J	V	REAL	
		5086	02/08/94	0.51 U	V					-124.72
						2.20	J	V	DUP	
			04/19/94	1.02	V					51.85
						0.60		V	DUP	
		51494	08/29/94	3.80 J	Y					200.00 *
						4.50		Y	REAL	
		6087	02/14/94	1.50 J	V					55.32
						0.85	U	V	DUP	
			04/14/94	0.71 U	V					-9.40
						0.78	U	V	DUP	
		6587	02/28/94	1.90 J	V					200.00 *
						2.30	J	V	REAL	
		6887	01/27/94	0.91 U	V					-35.29
						1.30	J	V	DUP	
			04/15/94	0.11 U	V					-333.33
						-0.44	U	V	DUP	
		70593	05/23/94	3.00 J	Z					200.00 *
						2.60	U	Y	REAL	
			08/30/94	3.00	Y					200.00 *
						5.00		Y	REAL	
		70693	03/04/94	3.30 J	V					200.00 *
						1.40	U	V	REAL	
			04/28/94	2.80 J	V					200.00 *
						2.60	J	V	REAL	
		70893		5.80	V					200.00 *
						4.90		V	REAL	
		71893	03/15/94	2.10 J	V					-32.00
						2.90	J	V	DUP	
		B110989	01/25/94	1.60 J	V					200.00 *
						1.10	J	V	REAL	
		P115089	02/09/94	2.20 J	V					200.00 *

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Relative Percent Differences

DRADS	GROSS BETA						2.50	J	V	REAL	
		P415889	02/14/94	1.70	J	V					200.00*
							1.20	J	V	REAL	
		P416189	02/17/94	1.70	J	V					-156.62*
							0.83	U	V	REAL	
							1.80	J	V	DUP	
							19.00		V	DUP	
			05/05/94	1.70	U	V					-132.34
							1.70	U	V	DUP	
							15.00		V	DUP	
		P416389	02/10/94	0.68	U	V					200.00*
							1.60	U	V	REAL	
		P416589	05/05/94	2.30	U	V					200.00*
							0.86	U	V	REAL	
	TOTAL RADIOCESIUM	02691	05/18/94	0.54		V					51.16
							0.32		V	DUP	
		1086	01/18/94	0.78		A					200.00*
							1.80	*	A	REAL	
		1386	01/20/94	1.31		A					200.00*
							1.70	*	A	REAL	
		1786	02/07/94	1.00	U	V					200.00*
							-0.19	U	V	REAL	
							2.40	U	V	LR	
		46292	03/03/94	0.33	U	V					188.24
							0.01	U	V	DUP	
			04/21/94	0.63	J	V					57.14
							0.35	U	V	DUP	
		4786	01/24/94	1.70		A					62.58*
							1.30	*	A	REAL	
							0.86		A	DUP	
							0.71	*	A	DUP	
			06/13/94	0.60	J	Y					66.67
							0.30	U	Y	DUP	
		4986	01/20/94	0.57		A					200.00*
							0.68	*	A	REAL	
		5086	02/08/94	0.26	U	V					12.24
							0.23	U	V	DUP	
			04/19/94	0.91		V					-76.61
							2.04		V	DUP	

(* in RPD denotes multiple REAL sample results)

Relative Percent Differences

DRADS	TOTAL RADIOCESIUM	5887	01/18/94	1.51	A					200.00 *
						1.60 *	A	REAL		
		6087	02/14/94	-0.74 U	A					74.07
						-0.34 U	A	DUP		
			04/14/94	0.45 U	V					747.37
						-0.26 U	V	DUP		
		6587	02/28/94	1.10	V					200.00 *
						0.02 U	V	REAL		
		6887	01/27/94	0.32 U	A					552.94
						-0.15 U	A	DUP		
			04/15/94	-0.32 U	V					963.64
						0.21 U	V	DUP		
		70493	08/25/94	0.79	Y					200.00 *
						0.73	Y	REAL		
		70593	05/23/94	0.46 U	Z					200.00 *
						-0.05 U	Y	REAL		
			08/30/94	0.40	Y					200.00 *
						-0.30	Y	REAL		
		70693	03/04/94	0.02 U	V					200.00 *
						0.20 U	V	REAL		
			04/28/94	0.60 BJ	V					200.00 *
						0.42 U	V	REAL		
		71893	03/15/94	-0.13 U	V					-5400.00
						0.14 U	V	DUP		
		B110889	01/24/94	1.59	A					200.00 *
						6.20 *	A	REAL		
		B206489	02/28/94	0.45 U	V					200.00 *
						0.08 U	V	REAL		
		B206589	01/20/94	4.11	A					200.00 *
						0.60 *	A	REAL		
		B207089	01/27/94	-0.25 U	A					200.00 *
						-2.30 U	A	REAL		
		P207389	04/15/94	0.25 U	V					200.00 *
						0.46 U	V	REAL		
		P415889	02/14/94	-0.70 U	A					200.00 *
						0.14 U	A	REAL		
		P416189	02/17/94	-0.51 U	V					22.43 *
						-0.68 U	V	REAL		
						-0.81 U	V	DUP		

(* in RPD denotes multiple REAL sample results)

Relative Percent Differences

DRADS	TOTAL RADIOCESIUM					-0.14	U	V	DUP	
			05/05/94	0.51 J	V					109.09
						0.52	U	V	DUP	
						-0.22	U	V	DUP	
		P416589		0.45 U	V					200.00 *
						0.18	U	V	REAL	
	CESIUM-134	4786	07/27/94	0.18 J	Y					-425.00
						-0.18	J	Y	DUP	
						-0.82	J	Y	DUP	
	CURIUM-244	4786	07/27/94	0.00 J	V					
						0.00	J	V	DUP	
						0.00	J	V	DUP	
	RADIUM-226	02691	08/25/94	0.48	Y					200.00 *
						0.56		Y	REAL	
		0390	02/09/94	0.08 U	V					200.00 *
						0.07	U	V	REAL	
		4786	07/27/94	1.03	Y					-35.86
						1.48		Y	DUP	
		70293	03/14/94	0.52 B	A					200.00 *
						0.70	B	A	REAL	
		B207089	01/27/94	0.87 B	A					200.00 *
						0.82	B	A	REAL	
		P207389	02/03/94	0.14 J	V					200.00 *
						0.17	J	V	REAL	
	AMERICIUM-241	46192	04/13/94	0.00 U	V					*
						0.00	U	V	REAL	
		46292	04/21/94	0.00 J	V					
						0.00	U	V	DUP	
						0.00	U	V	DUP	
		4786	07/27/94	0.01 J	V					66.67
						0.01	J	V	DUP	
						0.00	J	V	DUP	
		51094	09/01/94	0.00 U	Y					*
						0.00	U	Y	REAL	
		70093	03/04/94	0.00 U	V					*
						0.00	U	V	REAL	
			03/07/94	0.00 U	V					*
						0.00	U	V	REAL	
		70293	08/22/94	0.01	Y					200.00 *

Relative Percent Differences

DRADS	AMERICIUM-241						0.00		Y	REAL	
		70593	05/23/94	0.00 U	V						*
							0.00	U	V	REAL	
		71893	03/15/94	0.01 U	V						66.67
							0.01	BJ	V	DUP	
							0.00	U	A	DUP	
			08/30/94	0.00	Y						*
							0.00		Y	REAL	
		72093	03/10/94	0.01 U	V						200.00 *
							0.00	U	V	REAL	
		P415889	02/14/94	0.00 U	V						*
							0.00	U	V	REAL	
		P416189	02/17/94	0.01 U	V						
							0.01	BJ	V	DUP	
							0.01	J	V	DUP	
			05/05/94	0.00 U	Y						
							0.00	U	Y	DUP	
							0.00	U	V	DUP	
		P416589		0.00 U	V						200.00 *
							0.01	J	V	REAL	
	URANIUM-235	02691	05/18/94	0.90	V						72.73
							0.42		V	DUP	
		46292	03/03/94	0.04 U	V						200.00
							0.00	U	V	DUP	
			04/21/94	-0.01 U	V						
							-0.01	U	V	DUP	
		46392	03/02/94	0.00 U	V						200.00 *
							0.01	U	V	REAL	
		4786	01/24/94	0.45	V						191.30
							0.01		V	DUP	
			06/13/94	0.05 U	Y						200.00
							0.00	U	Y	DUP	
			07/27/94	-0.02 J	V						-314.29
							0.06	J	V	DUP	
							0.12	J	V	DUP	
		4986	04/14/94	0.00 U	V						200.00 *
							0.01	U	V	REAL	
		5086	02/08/94	0.04 U	A						333.33
							-0.01	U	A	DUP	

(* in RPD denotes multiple REAL sample results)

Relative Percent Differences

DRADS	URANIUM-235		04/19/94	0.43	V					77.42
						0.19		V	DUP	
		51494	08/29/94	0.10 U	Y					200.00*
						0.04	U	Y	REAL	
		6087	02/14/94	0.04 U	V					200.00
						0.00	U	V	DUP	
			04/14/94	0.00 U	V					
						0.00	U	V	DUP	
		6587	02/28/94	0.01 U	Z					*
						-0.01	U	V	REAL	
		6887	01/27/94	0.00 U	A					-200.00
						0.03	U	A	DUP	
			04/15/94	-0.01 U	V					-333.33
						0.04	U	V	DUP	
		70293	08/22/94	0.47	Y					200.00*
						0.31		Y	REAL	
		70693	03/04/94	0.00 U	V					200.00*
						0.01	U	V	REAL	
			04/28/94	0.02 U	V					200.00*
						0.00	U	V	REAL	
		70893		0.00 U	V					*
						0.00	U	V	REAL	
		71693	06/09/94	0.01	Y					200.00*
						0.00		Y	REAL	
		71893	03/15/94	-0.01 U	V					
						-0.01	U	V	DUP	
		P415889	02/14/94	-0.01 U	V					200.00*
						0.03	U	V	REAL	
		P416189	02/17/94	-0.01 U	V					-250.00*
						0.00	U	V	REAL	
						0.03	U	V	DUP	
						0.06	J	J	DUP	
			05/05/94	-0.02 U	V					66.67
						-0.01	U	V	DUP	
						-0.01	U	A	DUP	
		P416389	02/10/94	0.03 U	J					200.00*
						0.03	U	J	REAL	
		P416589	05/05/94	-0.01 U	V					200.00*
						0.00	U	V	REAL	

Relative Percent Differences

DRADS	RADIUM-228	0390	02/09/94	0.29 U	V					200.00*
						0.24 U	V	REAL		
		1490	02/03/94	0.45 U	V					200.00*
						1.70	V	REAL		
	URANIUM-238	02691	05/18/94	4.39	V					12.59
						3.87	V	DUP		
		46292	03/03/94	0.21 BJ	V					-28.57
						0.28 BJ	V	DUP		
			04/21/94	0.19 J	V					81.48
						0.08 U	V	DUP		
		46392	03/02/94	0.60 B	V					200.00*
						0.59 BJ	V	REAL		
		4786	01/24/94	0.97	V					103.13
						0.31	V	DUP		
			06/13/94	0.15 J	Y					-66.67
						0.30 BJ	Y	DUP		
			07/27/94	0.26	V					-106.31
						0.24	V	DUP		
						1.46	V	DUP		
		4986	04/14/94	0.06 U	V					200.00*
						0.13 J	V	REAL		
		5086	02/08/94	0.58 J	A					14.81
						0.50 J	A	DUP		
			04/19/94	0.58	V					20.95
						0.47	V	DUP		
		51494	08/29/94	0.40 J	Y					200.00*
						0.70	Y	REAL		
		6087	02/14/94	0.37 BJ	V					-64.22
						0.72 B	V	DUP		
			04/14/94	0.09 U	V					57.14
						0.05 U	V	DUP		
		6587	02/28/94	0.07 J	Z					200.00*
						0.09 U	V	REAL		
		6887	01/27/94	0.50 BJ	A					-43.75
						0.78 B	A	DUP		
			04/15/94	0.13 U	V					-32.26
						0.18 U	V	DUP		
		70293	08/22/94	1.69	Y					200.00*
						2.03	Y	REAL		

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Relative Percent Differences

DRADS	URANIUM-238	70693	03/04/94	0.04 BJ	V					200.00 *
						0.07	U	V	REAL	
			04/28/94	0.02 U	V					200.00 *
						0.00	U	V	REAL	
		70893		1.40	V					200.00 *
						1.90		V	REAL	
		71693	06/09/94	0.15	Y					200.00 *
						0.18		Y	REAL	
		71893	03/15/94	0.11 U	V					-37.04
						0.16	J	V	DUP	
		B110989	01/25/94	0.46 BJ	A					200.00 *
						0.82	B	A	REAL	
		P415889	02/14/94	0.69 B	V					200.00 *
						0.47	BJ	V	REAL	
		P416189	02/17/94	0.60 B	A					-33.58 *
						0.54	BJ	A	REAL	
						0.50	BJ	A	DUP	
						1.10	B	J	DUP	
			05/05/94	0.27 J	V					-22.95
						0.15	U	V	DUP	
						0.53	J	A	DUP	
		P416389	02/10/94	0.62 B	J					200.00 *
						0.68	B	J	REAL	
		P416589	05/05/94	0.13 U	V					200.00 *
						0.38	J	V	REAL	
TRADS	PLUTONIUM-239/240	0190	02/03/94	0.01 U	V					*
						-0.01	U	V	REAL	
		02691	05/18/94	0.01	V					200.00
						0.00		V	DUP	
		1786	07/08/94	0.00 U	V					*
						0.00	U	V	REAL	
		46292	03/03/94	0.00 U	V					
						0.00	U	V	DUP	
		4786	01/24/94	0.00	V					
						0.00		V	DUP	
			06/13/94	0.01 J	Y					200.00
						0.00	U	Y	DUP	
		5086	02/08/94	0.00 U	V					
						0.00	U	V	DUP	

(* in RPD denotes multiple REAL sample results)

Relative Percent Differences

TRADS	PLUTONIUM-239/240		04/19/94	0.00		V					
							0.00		V	DUP	
		5186	01/24/94	0.01	J	V					200.00*
							0.01	U	V	REAL	
		6087	02/14/94	0.01		V					200.00
							0.00	U	V	DUP	
			04/14/94	0.00	U	V					
							0.00	U	V	DUP	
		6887	01/27/94	0.01		V					200.00
							0.00	U	V	DUP	
			04/15/94	0.00	U	V					-200.00
							0.03		V	DUP	
		B410789	02/10/94	0.00	U	V					*
							0.00	U	V	REAL	
		P114489	02/14/94	0.00	U	V					*
							0.00	U	V	REAL	
		P207389	02/03/94	0.00	U	V					*
							0.00	U	V	REAL	
	TRITIUM	02691	05/18/94	559.92		V					-4.51
							585.73		V	DUP	
		0390	02/09/94	170.00	U	V					200.00*
							170.00	U	V	REAL	
		05093	03/15/94	3100.00		V					200.00*
							3200.00		V	REAL	
		46292	03/03/94	460.00		V					70.59
							220.00	U	V	DUP	
			04/21/94	240.00	U	V					34.15
							170.00	U	V	DUP	
		46492	08/30/94	50.00		Y					200.00*
							20.00		Y	REAL	
		4686	02/07/94	53.00	U	V					200.00*
							210.00	U	V	REAL	
		4786	01/24/94	-19.31		V					-1055.37
							28.34		V	DUP	
			06/13/94	400.00	B	Y					62.30
							210.00	U	Y	DUP	
			07/27/94	-48.90	J	V					-108.13
							-164.00	J	V	DUP	
		50194	08/29/94	180.00	U	Y					200.00*

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Relative Percent Differences

TRADS	TRITIUM						-110.00	U	Y	REAL	
		5086	02/08/94	170.00	U	V					42.86
							110.00	U	V	DUP	
			04/19/94	137.74		V					25.92
							106.13		V	DUP	
		51194	09/19/94	-82.00	U	Y					200.00*
							52.00	U	Y	REAL	
		5186	01/24/94	-190.00	U	V					200.00*
							-34.00	U	V	REAL	
		5687	03/01/94	1200.00		V					200.00*
							1100.00		V	REAL	
		6087	02/14/94	480.00	B	A					10.99
							430.00	B	A	DUP	
			04/14/94	400.00		V					-18.18
							480.00		V	DUP	
		6487	02/28/94	520.00		V					200.00*
							490.00		V	REAL	
		6587		100.00	U	V					200.00*
							400.00		V	REAL	
		6887	01/27/94	43.00	U	V					
							-43.00	U	V	DUP	
			04/15/94	480.00		V					-1.17*
							370.00	J	V	REAL	
							430.00		V	DUP	
		70393	03/17/94	410.00		V					200.00*
							420.00		V	REAL	
		70893	04/28/94	360.00	J	V					200.00*
							300.00	U	V	REAL	
		71893	03/15/94	330.00	U	V					27.59
							250.00	U	V	DUP	
		P207389	04/15/94	260.00	U	A					200.00*
							610.00		V	REAL	
		P416189	02/17/94	330.00	BJ	V					24.14*
							320.00	BJ	V	REAL	
							210.00		V	DUP	
							300.00	U	V	DUP	
			05/05/94	27.00	U	V					-80.00
							63.00	U	V	DUP	
	URANIUM-233,-234	51094	09/01/94	10.00		Y					200.00*

(* in RPD denotes multiple REAL sample results)

Relative Percent Differences

TRADS	URANIUM-233,-234					7.30	Y	REAL	
		70493	08/25/94	2.69	Y				200.00 *
						3.64	Y	REAL	
		75992	03/09/94	13.00	V				200.00 *
						12.00 B	V	REAL	
			04/20/94	10.00	V				200.00 *
						12.00	V	REAL	
		P416089	04/27/94	0.03 U	V				200.00 *
						0.06 U	V	REAL	
	STRONTIUM-89,90	50194	08/29/94	-0.08 U	Y				200.00 *
						0.16 U	Y	REAL	
		P115089	04/28/94	0.38 BJ	A				200.00 *
						0.23 U	V	REAL	
		P416089	04/27/94	0.58 J	V				200.00 *
						0.21 U	V	REAL	
	GROSS ALPHA	51094	09/01/94	130.00	Y				200.00 *
						300.00	Y	REAL	
		70293	08/22/94	18.37 C	Y				200.00 *
						21.11 C	Y	REAL	
		75992	03/09/94	20.00	V				200.00 *
						21.00	V	REAL	
			04/20/94	65.00	V				200.00 *
						61.00	V	REAL	
		P114489	02/14/94	3.50	A				200.00 *
						2.20	V	REAL	
		P114989	05/19/94	305.36 C	V				200.00 *
						97.00	V	REAL	
						120.00	V	REAL	
		P115089	04/28/94	13.00 B	V				200.00 *
						17.00 B	V	REAL	
		P218389		12.00 B	V				200.00 *
						12.00 B	V	REAL	
		P416489	02/10/94	14.00 B	V				200.00 *
						16.00 B	V	REAL	
	GROSS BETA	51094	09/01/94	81.00	Y				200.00 *
						220.00	Y	REAL	
		70293	08/22/94	19.27 C	Y				200.00 *
						21.60 C	Y	REAL	
		75992	03/09/94	17.00	V				200.00 *

Relative Percent Differences

Program	Analyte	Sample	Date	Result	Qual	Val	Result	Qual	Val	Type	RPD
TRADS	GROSS BETA						17.00		V	REAL	
			04/20/94	44.00		V					200.00*
							46.00		V	REAL	
		P114489	02/14/94	3.20	J	V					200.00*
							3.10	J	V	REAL	
		P114989	05/19/94	220.96	C	V					200.00*
							70.00		V	REAL	
							56.00		V	REAL	
		P115089	04/28/94	12.00		V					200.00*
							12.00		V	REAL	
		P218389		9.00		V					200.00*
							8.80		V	REAL	
		P416489	02/10/94	9.80		V					200.00*
							11.00		V	REAL	
	TOTAL RADIOCESIUM	50194	08/29/94	0.07	U	Y					200.00*
							0.05	U	Y	REAL	
		P115089	04/28/94	0.19	U	V					200.00*
							0.53	U	V	REAL	
		P416089	04/27/94	1.30	B	V					200.00*
							0.79	J	V	REAL	
	RADIUM-226	75992	03/09/94	0.89	B	A					200.00*
							0.77	B	A	REAL	
		P115089	04/28/94	0.69	B	A					200.00*
							0.70	B	A	REAL	
		P416189	02/17/94	0.90	B	Y					-22.95
							1.10	B	Z	DUP	
							1.20	B	Y	DUP	
							1.10	B	Z	DUP	
		P416589	05/05/94	1.60		Z					200.00*
							2.20		Y	REAL	
			08/18/94	0.18		Y					200.00*
							0.43		Y	REAL	
	NEPTUNIUM-237	4786	07/27/94	0.01	J	V					-111.11
							0.02	J	V	DUP	
							0.05	J	V	DUP	
	AMERICIUM-241	05193	04/21/94	0.32		Y					200.00*
							0.54		Y	REAL	
		1786	07/08/94	0.00	U	V					*
							0.00	U	V	REAL	

(* in RPD denotes multiple REAL sample results)

Relative Percent Differences

TRADS	AMERICIUM-241	46292	03/03/94	0.00 U	V					-200.00
						0.01	U	V	DUP	
		46392	03/02/94	0.00 U	V					*
						0.00	U	V	REAL	
		4786	01/24/94	0.00	V					-200.00
						0.01		V	DUP	
		5086	02/08/94	0.00 U	V					
						0.00	U	V	DUP	
			04/19/94	0.00	V					
						0.00		V	DUP	
		5186	01/24/94	0.00 U	V					*
						0.00	U	V	REAL	
		6087	02/14/94	0.00 J	V					-200.00
						0.01	J	V	DUP	
			04/14/94	0.01 U	V					
						0.01	U	V	DUP	
		6887	01/27/94	0.01 J	V					200.00
						0.00	U	V	DUP	
			04/15/94	0.01 U	V					200.00
						0.00	U	V	DUP	
		70393	03/17/94	0.01	V					200.00*
						0.01	U	V	REAL	
		71893	03/15/94	-0.01	V					200.00*
						0.00	U	V	REAL	
		B410789	02/10/94	0.00 U	V					*
						0.00	U	V	REAL	
		P114489	02/14/94	0.00 U	V					*
						0.00	U	A	REAL	
		P207389	02/03/94	0.00 U	V					*
						0.00	U	V	REAL	
			04/15/94	0.00 U	V					*
						0.00	U	V	REAL	
	URANIUM-235	51094	09/01/94	0.49 J	Y					200.00*
						0.40	J	Y	REAL	
		70493	08/25/94	0.23	Y					200.00*
						0.91		Y	REAL	
		75992	03/09/94	0.42 J	V					200.00*
						0.39	J	V	REAL	
			04/20/94	0.36 J	V					200.00*

Relative Percent Differences

TRADS	URANIUM-235					0.23 J	V	REAL	
		P416089	04/27/94	0.00 U	V				200.00*
						-0.01 U	V	REAL	
	RADIUM-228	P114989	05/19/94	7.80	Y				200.00*
						11.00	Y	REAL	
		P415989	04/28/94	3.90	Y				200.00*
						4.00	Y	REAL	
						3.90	Y	REAL	
	URANIUM-238	51094	09/01/94	11.00	Y				200.00*
						7.40	Y	REAL	
		70493	08/25/94	1.99	Y				200.00*
						1.89	Y	REAL	
		75992	03/09/94	11.00 B	V				200.00*
						10.00	V	REAL	
			04/20/94	8.40	V				200.00*
						9.60	V	REAL	
		P416089	04/27/94	-0.01 U	V				200.00*
						0.20 J	V	REAL	

(* in RPD denotes multiple REAL sample results)

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
DIOX8280	2,3,7,8-TCDD	4786	07/27/94	10.00	U	Y					
		6087	08/09/94	10.00	U	Y					
		6887	08/02/94	10.00	U	Y					
	C13-2378-TCDD	4786	07/27/94	99.00		Y					17.58
							83.00		Y	DUP	
		6087	08/09/94	41.00		Y					-30.93
							56.00		Y	DUP	
		6887	08/02/94	92.00		Y					2.20
							90.00		Y	DUP	
	PENTACHLORODIBENZOFURAN	4786	07/27/94	25.00	U	Y					
		6087	08/09/94	25.00	U	Y					
		6887	08/02/94	25.00	U	Y					
	HEXACHLORODIBENZO-p-DIOXIN	4786	07/27/94	25.00	U	Y					
		6087	08/09/94	25.00	U	Y					
		6887	08/02/94	25.00	U	Y					

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
	p-DIOXIN										
	PENTACHLORODIBENZO-p-DIOXIN	4786	07/27/94	25.00	U	Y					
		6087	08/09/94	25.00	U	Y					
		6887	08/02/94	25.00	U	Y					
	TETRACHLORODIBENZO-p-DIOXIN	4786	07/27/94	10.00	U	Y					
		6087	08/09/94	10.00	U	Y					
		6887	08/02/94	10.00	U	Y					
	C13-2378-TCDF	4786	07/27/94	96.00		Y					19.43
							79.00		Y	DUP	
		6087	08/09/94	37.00		Y					-35.56
							53.00		Y	DUP	
		6887	08/02/94	88.00		Y					2.30
							86.00		Y	DUP	
	HEXACHLORODIBENZOFURAN	4786	07/27/94	25.00	U	Y					

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
DIOX8280	HEXACHLORODIBENZO FURAN	6087	08/09/94	25.00	U	Y					
		6887	08/02/94	25.00	U	Y					
	TETRACHLORODIBENZ OFURAN	4786	07/27/94	10.00	U	Y					
		6087	08/09/94	10.00	U	Y					
		6887	08/02/94	10.00	U	Y					
	C13-123678-HxCDD	4786	07/27/94	114.00		Y					18.18
							95.00		Y	DUP	
		6087	08/09/94	49.00		Y					-25.00
							63.00		Y	DUP	
		6887	08/02/94	90.00		Y					-2.20
							92.00		Y	DUP	
	C13-1234678-HpCDF	4786	07/27/94	93.00		Y					7.82
							86.00		Y	DUP	
		6087	08/09/94	37.00		Y					-17.28
							44.00		Y	DUP	
		6887	08/02/94	93.00		Y					2.17
							91.00		Y	DUP	
DWQPL	ORTHOPHOSPHATE	02691	05/18/94	0.02	B	V					
		2586	07/20/94	0.00	U	Z					

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
DWQPL	ORTHOPHOSPHATE	2586	07/20/94	0.00	U	Z					
		46192	08/18/94	0.01	B	Z					200.00
				0.01	B	Z					
		46292	04/21/94	0.01	B	J					
			08/16/94	0.01	B	Z					100.00
		4786	01/24/94	0.02	U	J					
			06/13/94	0.01	B	V					
			07/27/94	417.00		Y					-4.45
							436.00		Y	DUP	
		4986	08/02/94	0.02	J	Y					200.00
				0.02	J	Y					
		5086	02/08/94	0.01	B	J					-66.67
							0.02	B	J	DUP	
			04/19/94	0.02	B	V					66.67
							0.01	B	V	DUP	
			07/28/94	0.01	U	Y					
		6087	02/14/94	0.00	B	V					
			04/14/94	0.01	U	V					
			08/09/94	240.00		Y					69.69
							230.00		Y	DUP	
		6887	01/27/94	0.01	U	V					
			04/15/94	0.01	U	V					
			08/02/94	329.00		Y					63.22

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
DWQPL	ORTHOPHOSPHATE	6887	08/02/94				344.00		Y	DUP	63.22
		B110989	08/03/94	0.01	J	Y					200.00
				0.01	J	Y					
		P114989	09/12/94	0.01		Y					
				0.01		Y					
		P207689	07/22/94	0.00	J	Y					
				0.00	J	Y					
		P415889	08/15/94	0.01	B	Z					200.00
				0.01	B	Z					
		P416189	02/17/94	0.01		V					
			05/05/94	0.01	U	V					
			08/23/94	0.01	U	Y					
HERB8150	2,4-DICHLOROPHENYLA CETIC ACID (SURR)	4786	07/27/94	81.00		Y					-10.53
							90.00		Y	DUP	
		6087	08/09/94	95.00		Y					1.06
							94.00		Y	DUP	
		6887	08/02/94	108.00		Y					-4.52
							113.00		Y	DUP	
	PHENOL, 2-(1-METHYLPROPYL)-4, 6-DINITRO-	4786	07/27/94	0.70	U	Y					
		6087	08/09/94	0.70	U	Y					-13.33

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
	6-DINITRO-						0.80	U	Y	DUP	
		6887	08/02/94	0.70	U	Y					
	PROPANOIC ACID,	4786	07/27/94	1.70	U	Y					-5.71
	2-(2,4,5-TRICHLOROPHE NOX						1.80	U	Y	DUP	
		6087	08/09/94	1.70	U	Y					
							1.80	U	Y	DUP	
		6887	08/02/94	1.70	U	Y					
							1.80	U	Y	DUP	
	2,4,5-TRICHLOROPHENO	4786	07/27/94	2.00	U	Y					-4.88
	XYACETIC ACID						2.10	U	Y	DUP	
		6087	08/09/94	2.00	U	Y					-9.52
							2.20	U	Y	DUP	

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
HERB8150	2,4,5-TRICHLOROPHENOXYACETIC ACID	6887	08/02/94	2.00	U	Y					-4.88
							2.10	U	Y	DUP	
	2,4-DICHLOROPHENOXYACETIC ACID, SALTS AN	4786	07/27/94	12.00	U	Y					-8.00
							13.00	U	Y	DUP	
		6087	08/09/94	12.00	U	Y					
							13.00	U	Y	DUP	
		6887	08/02/94	12.00	U	Y					
							13.00	U	Y	DUP	
PEST8080	HEPTACHLOR EPOXIDE	4786	07/27/94	0.83	U	Y					
		6087	08/09/94	0.83	U	Y					
		6887	08/02/94	0.83	U	Y					
	ENDOSULFAN SULFATE	6087	08/09/94	0.66	U	Y					
		6887	08/02/94	0.66	U	Y					
	AROCLOR-1260	4786	07/27/94	1.00	U	Y					
		6087	08/09/94	1.00	U	Y					

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
PEST8080	AROCLOR-1260	6087	08/09/94								
		6887	08/02/94	1.00	U	Y					
	AROCLOR-1254	4786	07/27/94	1.00	U	Y					
		6087	08/09/94	1.00	U	Y					
		6887	08/02/94	1.00	U	Y					
	AROCLOR-1221	4786	07/27/94	1.00	U	Y					
		6087	08/09/94	1.00	U	Y					
		6887	08/02/94	1.00	U	Y					
	AROCLOR-1232	4786	07/27/94	1.00	U	Y					
		6087	08/09/94	1.00	U	Y					
		6887	08/02/94	1.00	U	Y					
	AROCLOR-1248	4786	07/27/94	1.00	U	Y					
		6087	08/09/94	1.00	U	Y					
		6887	08/02/94	1.00	U	Y					
	AROCLOR-1016	4786	07/27/94	1.00	U	Y					
		6087	08/09/94	1.00	U	Y					
		6887	08/02/94	1.00	U	Y					
	DI-BUTYLCHLORENDATE	4786	07/27/94	76.00		Y					11.11

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
PEST8080	DI-BUTYLCHLORENDATE	4786	07/27/94				68.00		Y	DUP	11.11
		6087	08/09/94	72.00		Y					-10.53
							80.00		Y	DUP	
		6887	08/02/94	82.00		Y					7.59
							76.00		Y	DUP	
	ALDRIN	4786	07/27/94	0.04	U	Y					
		6087	08/09/94	0.04	U	Y					
		6887	08/02/94	0.04	U	Y					
	alpha-BHC	4786	07/27/94	0.03	U	Y					
		6087	08/09/94	0.03	U	Y					
		6887	08/02/94	0.03	U	Y					
	beta-BHC	4786	07/27/94	0.06	U	Y					
		6087	08/09/94	0.06	U	Y					
		6887	08/02/94	0.06	U	Y					
	delta-BHC	4786	07/27/94	0.09	U	Y					
		6087	08/09/94	0.09	U	Y					
		6887	08/02/94	0.09	U	Y					
	ENDOSULFAN II	6087	08/09/94	0.04	U	Y					

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
PEST8080	ENDOSULFAN II	6087	08/09/94								
		6887	08/02/94	0.04	U	Y					
	4,4'-DDT	4786	07/27/94	0.12	U	Y					
		6087	08/09/94	0.12	U	Y					
		6887	08/02/94	0.12	U	Y					
	AROCLOR-1242	4786	07/27/94	1.00	U	Y					
		6087	08/09/94	1.00	U	Y					
		6887	08/02/94	1.00	U	Y					
	CHLORDANE	4786	07/27/94	0.14	U	Y					
		6087	08/09/94	0.14	U	Y					
		6887	08/02/94	0.14	U	Y					
	gamma-BHC (LINDANE)	4786	07/27/94	0.04	U	Y					
		6087	08/09/94	0.04	U	Y					
		6887	08/02/94	0.04	U	Y					
	DIELDRIN	4786	07/27/94	0.02	U	Y					
		6087	08/09/94	0.02	U	Y					
		6887	08/02/94	0.02	U	Y					
	ENDRIN	4786	07/27/94	0.06	U	Y					

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
PEST8080	ENDRIN	6087	08/09/94	0.06	U	Y					
		6887	08/02/94	0.06	U	Y					
	METHOXYCHLOR	4786	07/27/94	1.80	U	Y					
		6087	08/09/94	1.80	U	Y					
		6887	08/02/94	1.80	U	Y					
	4,4'-DDD	4786	07/27/94	0.11	U	Y					
		6087	08/09/94	0.11	U	Y					
		6887	08/02/94	0.11	U	Y					
	4,4'-DDE	4786	07/27/94	0.04	U	Y					
		6087	08/09/94	0.04	U	Y					
		6887	08/02/94	0.04	U	Y					
	ENDRIN ALDEHYDE	4786	07/27/94	0.23	U	Y					
		6087	08/09/94	0.23	U	Y					
		6887	08/02/94	0.23	U	Y					
	HEPTACHLOR	4786	07/27/94	0.03	U	Y					
		6087	08/09/94	0.03	U	Y					
		6887	08/02/94	0.03	U	Y					
	TOXAPHENE	4786	07/27/94	2.40	U	Y					

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
PEST8080	TOXAPHENE	4786	07/27/94								
		6087	08/09/94	2.40	U	Y					
		6887	08/02/94	2.40	U	Y					
	ENDOSULFAN I	4786	07/27/94	0.14	U	Y					
		6087	08/09/94	0.14	U	Y					
		6887	08/02/94	0.14	U	Y					
PESTCLP	HEPTACHLOR EPOXIDE	P416189	02/17/94	0.05	U	V					
			05/05/94	0.05	U	V					
	ENDOSULFAN SULFATE	P416189	02/17/94	0.10	U	V					
			05/05/94	0.10	U	V					
	AROCLOR-1260	P416189	02/17/94	1.00	U	V					
			05/05/94	1.00	U	V					
	AROCLOR-1254	P416189	02/17/94	1.00	U	V					
			05/05/94	1.00	U	V					
	AROCLOR-1221	P416189	02/17/94	0.50	U	V					
			05/05/94	0.50	U	V					
	AROCLOR-1232	P416189	02/17/94	0.50	U	V					
			05/05/94	0.50	U	V					

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
PESTCLP	AROCLOR-1248	P416189	02/17/94	0.50	U	V					
			05/05/94	0.50	U	V					
	AROCLOR-1016	P416189	02/17/94	0.50	U	V					
			05/05/94	0.50	U	V					
	DI-BUTYLCHLORENDATE	P416189	02/17/94	68.00		Z					4.51
							65.00		Z	DUP	
			05/05/94	91.00		Z					-7.41
							98.00		Z	DUP	
	ALDRIN	P416189	02/17/94	0.05	U	V					
			05/05/94	0.05	U	V					
	alpha-BHC	P416189	02/17/94	0.05	U	V					
			05/05/94	0.05	U	V					
	beta-BHC	P416189	02/17/94	0.05	U	V					
			05/05/94	0.05	U	V					
	delta-BHC	P416189	02/17/94	0.05	U	V					
			05/05/94	0.05	U	V					
	ENDOSULFAN II	P416189	02/17/94	0.10	U	V					
			05/05/94	0.10	U	V					

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
PESTCLP	ENDOSULFAN II	P416189	05/05/94								
	4,4'-DDT	P416189	02/17/94	0.10	U	V					
			05/05/94	0.10	U	V					
	alpha-CHLORDANE	P416189	02/17/94	0.50	U	V					
			05/05/94	0.50	U	V					
	gamma-CHLORDANE	P416189	02/17/94	0.50	U	V					
			05/05/94	0.50	U	V					
	AROCLOR-1242	P416189	02/17/94	0.50	U	V					
			05/05/94	0.50	U	V					
	ENDRIN KETONE	P416189	02/17/94	0.10	U	V					
			05/05/94	0.10	U	V					
	gamma-BHC (LINDANE)	P416189	02/17/94	0.05	U	V					
			05/05/94	0.05	U	V					
	DIELDRIN	P416189	02/17/94	0.10	U	V					
			05/05/94	0.10	U	V					
	ENDRIN	P416189	02/17/94	0.10	U	V					
			05/05/94	0.10	U	V					
	METHOXYCHLOR	P416189	02/17/94	0.50	U	V					

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
PESTCLP	METHOXYCHLOR	P416189	05/05/94	0.50	U	V					
	4,4'-DDD	P416189	02/17/94	0.10	U	V					
			05/05/94	0.10	U	V					
	4,4'-DDE	P416189	02/17/94	0.10	U	V					
			05/05/94	0.10	U	V					
	HEPTACHLOR	P416189	02/17/94	0.05	U	V					
			05/05/94	0.05	U	V					
	TOXAPHENE	P416189	02/17/94	1.00	U	V					
			05/05/94	1.00	U	V					
	ENDOSULFAN I	P416189	02/17/94	0.05	U	V					
			05/05/94	0.05	U	V					
WQPL	NITRATE/NITRITE	02691	05/18/94	14.66		V					-0.95
							14.80		V	DUP	
		2586	07/20/94	0.36		Z					200.00
		46292	03/03/94	0.80		V					
			04/21/94	0.87		V					-3.39
							0.90		V	DUP	
			08/16/94	0.64		V					-4.58
							0.67		V	DUP	
		4786	01/24/94	0.98		V					3.11
							0.95		V	DUP	
			06/13/94	0.93		V					88.37

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
WQPL	NITRATE/NITRITE	4786	06/13/94				0.36		V	DUP	88.37
			07/27/94	644.00		Y					-3.06
							664.00		Y	DUP	
		5086	02/08/94	0.96		V					-4.08
							1.00		V	DUP	
			04/19/94	0.42		V					-2.35
							0.43		V	DUP	
			07/28/94	1.00		Y					-196.40
							110.00		Y	DUP	
		5186	08/03/94	3.81		Y					200.00
		6087	02/14/94	4.91		V					-4.58
							5.14		V	DUP	
			04/14/94	4.30		V					
			08/09/94	4540.00		Y					63.72
							4630.00		Y	DUP	
		6887	01/27/94	5.60		V					3.64
							5.40		V	DUP	
			04/15/94	5.20		V					
			08/02/94	4910.00		Y					67.77
							4800.00		Y	DUP	
		70093	08/29/94	2590.00		Y					200.00
		P114989	09/12/94	0.50		Y					
				0.50		Y					
		P415889	08/15/94	1.77		Z					
		P416189	02/17/94	1.70		V					
			05/05/94	3.60		V					5.71
							3.40		V	DUP	

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
WQPL	NITRATE/NITRITE	P416189	08/23/94	1.60		Y					
	TOTAL ORGANIC HALOGENS (TOX)	0390	09/06/94	0.02	U	Y					200.00
	CHEMICAL OXYGEN DEMAND	0390	09/06/94	5.00	U	Y					200.00
				5.00	U	Y					
		6087	02/14/94	5.90	U	V					
			04/14/94	12.00		V					82.35
							5.00	U	V	DUP	
		6887	01/27/94	5.00	U	V					
			04/15/94	5.00	U	V					
		71893	03/15/94	5.90	U	Y					-27.11
							7.75	J	Y	DUP	
	pH	2686	07/20/94	7.65		Z					200.00
		46292	08/16/94	7.26		J					-0.82
							7.32		J	DUP	
		4786	07/27/94	7.45		Y					-0.27

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
WQPL	pH	4786	07/27/94				7.47		Y	DUP	-0.27
		4986	08/02/94	7.09		Y					200.00
		5086	07/28/94	6.98		Y					-4.21
							7.28		Y	DUP	
		6087	08/09/94	6.52		Y					67.69
							6.45		Y	DUP	
		6887	08/02/94	7.20		Y					67.78
				7.20		Y					
							7.11		Y	DUP	
		P415889	08/15/94	6.91		Z					200.00
	TOTAL SUSPENDED SOLIDS	02691	05/18/94	343.00		V					-42.12
							526.00		V	DUP	
		2586	07/20/94	268.00		Z					200.00
		46292	03/03/94	660.00		V					61.39
							350.00		V	DUP	
			04/21/94	912.00		V					60.39
							489.00		V	DUP	
			08/16/94	404.00		V					27.29
							307.00		V	DUP	
		4786	01/24/94	283.00		V					-37.59

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
WQPL	TOTAL SUSPENDED SOLIDS	4786	01/24/94				414.00		V	DUP	-37.59
			06/13/94	330.00		V					23.73
							260.00		V	DUP	
			07/27/94	384.00		Y					-55.64
							680.00		Y	DUP	
		4986	08/02/94	82.00		Y					200.00
		5086	02/08/94	195.00		V					77.58
							86.00		V	DUP	
			04/19/94	46.00		V					2.20
							45.00		V	DUP	
			07/28/94	45.00		Y					-14.43
							52.00		Y	DUP	
		6087	02/14/94	2148.00		V					101.47
							702.00		V	DUP	
			04/14/94	2100.00		V					4.88
							2000.00		V	DUP	
			08/09/94	1190.00		Y					59.38

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
WQPL	TOTAL SUSPENDED SOLIDS	6087	08/09/94								59.38
							1350.00		Y	DUP	
		6887	01/27/94	450.00		V					-2.20
							460.00		V	DUP	
			04/15/94	520.00		V					88.89
							200.00		V	DUP	
			08/02/94	88.00		Y					-18.75
							210.00		Y	DUP	
		70693	08/25/94	3245.00		Y					200.00
		71893	03/15/94	310.00		Y					-34.67
							440.00		Y	DUP	
		P114989	09/12/94	3500.00		Y					200.00
		P415889	08/15/94	680.00		Z					
		P416189	02/17/94	240.00		V					-4.08

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
WQPL	TOTAL SUSPENDED SOLIDS	P416189	02/17/94				250.00		V	DUP	-4.08
			05/05/94	210.00		V					-76.47
							470.00		V	DUP	
			08/23/94	430.00		Y					-29.70
							580.00		Y	DUP	
	TOTAL DISSOLVED SOLIDS	02691	05/18/94	451.00		V					0.44
							449.00		V	DUP	
		2686	07/20/94	1359.00		Z					200.00
		46292	03/03/94	150.00		V					
			04/21/94	115.00		V					-19.61
							140.00		V	DUP	
			08/16/94	168.00		V					-1.77
							171.00		V	DUP	
		4786	01/24/94	147.00		J					7.77
							136.00		J	DUP	
			06/13/94	120.00		V					-8.00

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
WQPL	TOTAL DISSOLVED SOLIDS	4786	06/13/94				130.00		V	DUP	-8.00
			07/27/94	138.00		Y					1.46
							136.00		Y	DUP	
		4986	08/02/94	163.00		Y					200.00
		5086	02/08/94	164.00		V					-5.34
							173.00		V	DUP	
			04/19/94	141.00		V					19.46
							116.00		V	DUP	
			07/28/94	270.00		Y					29.79
							200.00		Y	DUP	
		6087	02/14/94	184.00		V					3.31
							178.00		V	DUP	
			04/14/94	180.00		V					
			08/09/94	276.00		Y					89.57
							180.00		Y	DUP	

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
WQPL	TOTAL DISSOLVED SOLIDS	6887	01/27/94	200.00		V					-9.52
							220.00		V	DUP	
			04/15/94	230.00		V					-12.24
							260.00		V	DUP	
			08/02/94	227.00		Y					60.77
							244.00		Y	DUP	
		70693	08/25/94	267.00		Y					200.00
		71893	03/15/94	234.00		Y					3.04
							227.00		Y	DUP	
		P114989	09/12/94	180.00		Y					200.00
		P415889	08/15/94	311.00		Z					
		P416189	02/17/94	450.00		V					
			05/05/94	360.00		V					-2.74

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
WQPL	TOTAL DISSOLVED SOLIDS	P416189	05/05/94				370.00		V	DUP	-2.74
			08/23/94	470.00		Y					-10.10
							520.00		Y	DUP	
	SPECIFIC CONDUCTIVITY	1386	07/18/94	1102.10		Z					200.00
		46292	08/16/94	200.40		V					-5.77
							212.30		V	DUP	
		4786	07/27/94	171.00		Y					
		4986	08/02/94	238.30		Y					200.00
		5086	07/28/94	270.00		Y					3.77
							260.00		Y	DUP	
		6087	08/09/94	195.00		Y					67.36
							191.00		Y	DUP	
		6887	08/02/94	269.00		Y					66.00

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
WQPL	SPECIFIC CONDUCTIVITY	6887	08/02/94				270.00		Y	DUP	66.00
		70093	08/29/94	183.00		Y					200.00
		P114989	09/12/94	260.00		Y					
				260.00		Y					
		P415889	08/15/94	422.40		Z					
				422.40		Z					
		P416189	08/23/94	740.00		Y					-1.34
							750.00		Y	DUP	
	TOTAL ORGANIC CARBON	0390	09/06/94	1.00		Y					200.00
				1.00		Y					
				1.00		Y					
				1.00		Y					
		4786	07/27/94	1.00	U	Y					
		6087	02/14/94	0.59	B	J					-3.33
							0.61	B	J	DUP	
			04/14/94	1.00		V					

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
WQPL	TOTAL ORGANIC CARBON	6087	04/14/94								
			08/09/94	9.54		Y					159.05
							2.32		Y	DUP	
		6887	01/27/94	1.00	U	V					
			04/15/94	1.00		V					-66.67
							2.00		V	DUP	
			08/02/94	2.37		Y					80.56
							1.92		Y	DUP	
		70093	08/29/94	1.44		Y					200.00
		71893	03/15/94	4.55		Y					7.29
							4.23		Y	DUP	
		B208189	07/29/94	8.00		Y					200.00
				8.00		Y					
				8.00		Y					

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
WQPL	TOTAL ORGANIC CARBON	B208189	07/29/94	8.00		Y					200.00
	ORTHOPHOSPHATE	70093	08/29/94	128.00		Z					200.00
				128.00		Z					
	NITRITE	71893	03/15/94	0.00	U	Y					
	SULFATE	02691	05/18/94	45.09		V					-0.42
							45.28		V	DUP	
		05093	04/21/94	114.30		V					200.00
		1386	07/18/94	92.91		Z					
		3086	04/08/94	144.50		V					
				144.50		V					
		46292	03/03/94	6.00		V					18.18
							5.00		V	DUP	
			04/21/94	6.19		V					-1.12
							6.26		V	DUP	
			08/16/94	6.31		V					0.64
							6.27		V	DUP	
		4786	01/24/94	5.03		V					-0.59
							5.06		V	DUP	
			06/13/94	5.00		V					2.02
							4.90	B	V	DUP	
			07/27/94	3.76		Y					0.27
							3.75		Y	DUP	
		5086	02/08/94	11.87		V					0.59
							11.80		V	DUP	
			04/19/94	15.01		V					-0.27
							15.05		V	DUP	
			07/28/94	7.00		Y					
		5186	08/03/94	26.47		Y					200.00
		6087	02/14/94	22.78		V					0.44

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
WQPL	SULFATE	6087	02/14/94				22.68		V	DUP	0.44
			04/14/94	27.00		V					
			08/09/94	25.60		Y					66.49
							25.70		Y	DUP	
		6187	04/19/94	25.34		V					200.00
		6887	01/27/94	29.00		V					3.51
							28.00		V	DUP	
			04/15/94	32.00		V					3.17
							31.00		V	DUP	
			08/02/94	31.80		Y					65.70
							32.30		Y	DUP	
		70093	08/29/94	31.60		Y					200.00
		71893	03/15/94	31.54		Y					1.73
							31.00		Y	DUP	
		P114989	09/12/94	28.00		Y					200.00
		P415889	08/15/94	19.75		Z					
		P416189	02/17/94	18.00		V					-5.41
							19.00		V	DUP	
			05/05/94	21.00		V					4.88
							20.00		V	DUP	
			08/23/94	9.00		Y					11.76
							8.00		Y	DUP	
	CHLORIDE	02691	05/18/94	22.98		V					0.35
							22.90		V	DUP	
		1386	07/18/94	99.05		Z					200.00
		1486	04/12/94	82.54		V					

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
WQPL	CHLORIDE	3086	04/08/94	0.00	U	Z					200.00
		46292	03/03/94	3.00		V					
			08/16/94	2.85	B	V					-3.45
							2.95	B	V	DUP	
		4786	01/24/94	2.76	B	V					-1.80
							2.81	B	V	DUP	
			06/13/94	2.70	B	V					
			07/27/94	2.84		Y					-0.35
							2.85		Y	DUP	
		5086	02/08/94	10.57		V					0.38
							10.53		V	DUP	
			04/19/94	5.04		V					-2.35
							5.16		V	DUP	
			07/28/94	11.00		Y					
		5186	08/03/94	4.18	J	Y					200.00
		6087	02/14/94	3.34	B	V					-0.30
							3.35	B	V	DUP	
			04/14/94	4.00		V					
			08/09/94	3.32		Y					66.40
				3.32		Y					
							3.33		Y	DUP	
		6887	01/27/94	6.00		V					
			04/15/94	6.00		V					
			08/02/94	6.03		Y					67.18
							6.09		Y	DUP	
		70093	08/29/94	3.39		Y					200.00

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
WQPL	CHLORIDE	70093	08/29/94								200.00
		71893	03/15/94	6.16		Y					1.80
							6.05		Y	DUP	
		P114989	09/12/94	1.00		Y					200.00
				1.00		Y					
		P415889	08/15/94	50.80		Z					
		P416189	02/17/94	99.00		V					
			05/05/94	60.00		V					-1.65
							61.00		V	DUP	
			08/23/94	120.00		Y					
	FLUORIDE	02691	05/18/94	0.87		V					-6.67
							0.93		V	DUP	
		1386	07/18/94	0.44		Z					200.00
		46292	03/03/94	0.40		V					
			04/21/94	0.39		V					-12.05
							0.44		V	DUP	
			08/16/94	0.28		V					-6.90
							0.30		V	DUP	
		4786	01/24/94	0.50		V					-5.83
							0.53		V	DUP	
			06/13/94	0.52		V					1.94
							0.51		V	DUP	
			07/27/94	0.50		Y					2.02
							0.49		Y	DUP	
		5086	02/08/94	0.22		V					4.65
							0.21		V	DUP	
			04/19/94	0.23	U	J					-19.61
							0.28		V	DUP	
			07/28/94	0.30		Y					

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
WQPL	FLUORIDE	5186	08/03/94	0.17		Y					200.00
				0.17		Y					
		6087	02/14/94	0.17	U	J					19.35
							0.14	U	J	DUP	
			04/14/94	0.10	U	V					
			08/09/94	0.15		Y					69.77
							0.14		Y	DUP	
		6887	01/27/94	0.20		V					
			04/15/94	0.20		V					
			08/02/94	0.18		Y					66.67
				0.18		Y					
		70093	08/29/94	0.12		Y					200.00
				0.12		Y					
		71893	03/15/94	0.18		Y					
		P114989	09/12/94	1.00		Y					200.00
				1.00		Y					
		P415889	08/15/94	0.20		Z					
		P416189	02/17/94	0.30		V					
			05/05/94	0.40		V					
			08/23/94	0.40		Y					
	SULFIDE	71893	03/15/94	1.00	U	Y					
	CARBONATE AS CACO3	02691	05/18/94	0.30	U	V					-28.57
							0.40	B	V	DUP	
		1386	07/18/94	1.33	B	Z					200.00

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
WQPL	CARBONATE AS CACO3	1386	07/18/94								200.00
		46292	03/03/94	1.00	U	V					
			04/21/94	0.30	U	V					
			08/16/94	0.30	U	V					
		4786	01/24/94	0.30	U	V					
			06/13/94	0.30	U	V					
			07/27/94	10.00	U	Y					
		5086	02/08/94	0.30	U	V					
			04/19/94	0.30	U	V					
			07/28/94	1.00	U	Y					
		5186	08/03/94	0.30	U	Y					200.00
				0.30	U	Y					
		6087	02/14/94	0.30	U	V					
			04/14/94	1.00	U	V					
			08/09/94	10.00	U	Y					66.67
				10.00	U	Y					
		6887	01/27/94	1.00	U	V					
			04/15/94	1.00	U	V					
			08/02/94	10.00	U	Y					66.67
				10.00	U	Y					

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
WQPL	CARBONATE AS CACO3	70093	08/29/94	10.00	U	Y					200.00
				10.00	U	Y					
		71893	03/15/94	0.30	U	Y					
		P114989	09/12/94	1.00	U	Y					200.00
				1.00	U	Y					
		P415889	08/15/94	0.55	U	Z					
				0.55	U	Z					
		P416189	02/17/94	1.00	U	V					
			05/05/94	1.00	U	V					
			08/23/94	1.00	U	Y					
	CYANIDE	02691	05/18/94	0.00	U	V					
		46292	03/03/94	0.01	U	V					
			04/21/94	0.00	U	V					
			08/16/94	0.01	U	V					
		4786	01/24/94	0.00	U	V					
			06/13/94	0.01	U	J					
			07/27/94	5.00	U	Y					-98.48
							14.70		Y	DUP	
		4986	08/02/94	0.00	U	Y					
				0.00	U	Y					
		5086	02/08/94	0.00	U	V					
			04/19/94	0.00	U	V					
			07/28/94	0.01	U	Y					

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
WQPL	CYANIDE	5086	07/28/94								
		6087	02/14/94	0.00	U	V					
			04/14/94	0.01	U	V					
			08/09/94	10.00	U	Y					100.00
							5.00	U	Y	DUP	
		6887	01/27/94	0.01	U	V					
			04/15/94	0.01	U	V					
			08/02/94	10.00	U	Y					86.21
							6.50		Y	DUP	
		70093	08/29/94	10.00	U	Y					200.00
		71893	03/15/94	0.00	U	Y					
		P114989	09/12/94	0.01	U	Y					200.00
				0.01	U	Y					
		P207689	07/22/94	0.01	U	Y					
				0.01	U	Y					
		P415889	08/15/94	0.01	U	Z					
				0.01	U	Z					
		P416189	02/17/94	0.01	U	V					
			05/05/94	0.01	U	V					
			08/23/94	0.01	U	Y					
		P416589	08/18/94	0.01	U	Y					200.00
				0.01	U	Y					
	BICARBONATE AS CACO3	02691	05/18/94	209.16		V					2.51

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
WQPL	BICARBONATE AS CACO3	02691	05/18/94				203.98		V	DUP	2.51
		1386	07/18/94	435.51		Z					200.00
		46292	03/03/94	92.00		V					4.44
							88.00		V	DUP	
			04/21/94	88.47		V					-3.38
							91.51		V	DUP	
			08/16/94	94.59		V					9.68
							85.86		V	DUP	
		4786	01/24/94	76.06		V					-13.17
							86.78		V	DUP	
			06/13/94	84.00		V					-1.18
							85.00		V	DUP	
			07/27/94	77.40		Y					-3.80
							80.40		Y	DUP	
		5086	02/08/94	91.46		V					-13.74
							104.95		V	DUP	
			04/19/94	54.25		V					-11.57

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
WQPL	BICARBONATE AS CACO3	5086	04/19/94				60.91		V	DUP	-11.57
			07/28/94	96.00		Y					2.11
							94.00		Y	DUP	
		5186	08/03/94	32.72		Y					200.00
		6087	02/14/94	55.83		V					3.81
							53.74		V	DUP	
			04/14/94	50.00		V					4.08
							48.00		V	DUP	
			08/09/94	46.20		Y					65.68
							45.20		Y	DUP	
		6887	01/27/94	70.00		V					
			04/15/94	68.00		V					
			08/02/94	73.40		Y					68.81

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
WQPL	BICARBONATE AS CACO3	6887	08/02/94				71.40		Y	DUP	68.81
		70093	08/29/94	37.00		Y					200.00
		71893	03/15/94	122.42		Y					0.56
							121.74		Y	DUP	
		P114989	09/12/94	110.00		Y					200.00
				110.00		Y					
		P415889	08/15/94	75.69		Z					
		P416189	02/17/94	160.00		J					
			05/05/94	140.00		V					-13.33
							160.00		V	DUP	
			08/23/94	140.00		Y					
							160.00		Y	DUP	
	AMMONIA	2586	07/20/94	0.31		Z					200.00
		46292	08/16/94	4.34		V					1.16
							4.29		V	DUP	
		4786	07/27/94	300.00	U	Y					

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis)	Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
WQPL	AMMONIA	5086	07/28/94	0.60		Y					142.86
							0.10	U	Y	DUP	
		5186	08/03/94	5.92		Y					200.00
		6087	02/14/94	0.09	U	J					100.00
							0.03	U	J	DUP	
			04/14/94	0.10	U	V					
			08/09/94	300.00	U	Y					66.67
				300.00	U	Y					
		6887	01/27/94	0.10	U	V					
			04/15/94	0.10	U	V					
			08/02/94	300.00	U	Y					66.67
				300.00	U	Y					
		70093	08/29/94	30.00	U	Y					200.00
				30.00	U	Y					
		71893	03/15/94	0.06		Y					18.18
							0.05	J	Y	DUP	
		P114989	09/12/94	0.10	U	Y					200.00
				0.10	U	Y					
		P415889	08/15/94	4.23		Z					
		P416189	02/17/94	0.10	U	V					
			05/05/94	0.10	U	V					
			08/23/94	0.20		Y					66.67
							0.10	U	Y	DUP	
	CHEMICAL OXYGEN DEMAND	4786	07/27/94	5.00	U	Y					

Relative Percent Differences
1994 RCRA Data

Test Group Code (Tot/Dis) Analyte	Location	Sample Date	Real Result	Real Qual	Real Val	Duplicate Result	Duplicate Qual	Duplicate Val	QC Code	Relative % Difference
DEMAND										
	6087	08/09/94	30.00		Y					142.86
			30.00		Y					
						10.00		Y	DUP	
	6887	08/02/94	5.00	U	Y					66.67
			5.00	U	Y					
	70093	08/29/94	5.00	U	Y					200.00
			5.00	U	Y					

APPENDIX E

1994 FIELD PARAMETERS

APPENDIX E

Field parameter data for the 1994 Annual RCRA Groundwater Monitoring Report are included on a 3 1/2-inch disk. The file is located in an executable ZIP file and can be restored by typing INSTALL.BAT from the B: DOS prompt.

APPENDIX E-1

SOLAR EVAPORATION PONDS - FIELD PARAMETERS, 1994

Appendix E-1
Solar Evaporation Ponds - Field Parameters, 1994

Well Number	Sample Number	Sample Date	pH	Specific Conductivity	
02691	GW00256GA	21-FEB-94	7.39	0.83	MS/CM
02691	GW00765GA	18-MAY-94	7.39	0.72	MS/CM
02691	GW01283GA	25-AUG-94	7.43	0.72	MS/CM
05093	GW00411GA	15-MAR-94	7.20	8.81	MS/CM
05093	GW00564GA	21-APR-94	7.02	6.98	MS/CM
05093	GW00997GA	26-JUL-94	6.68	10.75	MS/CM
05093	GW01478GA	19-OCT-94	6.87	17.32	MS/CM
05093	GW01642GA	24-OCT-94	6.77	16.36	MS/CM
05193	GW00412GA	14-MAR-94	7.16	4.12	MS/CM
05193	GW00565GA	21-APR-94	7.02	4.02	MS/CM
05193	GW00954GA	15-JUL-94	7.42	3.55	MS/CM
05193	GW01479GA	14-OCT-94	7.41	4.42	MS/CM
05293	GW00455GA	28-MAR-94	7.83	0.89	MS/CM
05293	GW00499GA	02-JUN-94	7.60	0.93	MS/CM
05293	GW00955GA	13-JUL-94	7.23	0.97	MS/CM
05293	GW01547GA	05-OCT-94			MS/CM
1386	GW00046GA	20-JAN-94	7.51	1.47	MS/CM
1386	GW00545GA	13-APR-94	7.01	1.27	MS/CM
1386	GW00980GA	18-JUL-94	7.19	1.42	MS/CM
1386	GW01451GA	06-OCT-94	7.35	1.15	MS/CM
1486	GW00140GA	27-JAN-94	7.53	2.08	MS/CM
1486	GW00482GA	12-APR-94	7.69	1.97	MS/CM
1486	GW01096GA	15-AUG-94	7.50	2.16	MS/CM
1486	GW01466GA	10-OCT-94	7.34	1.90	MS/CM
1586	GW00205GA	07-FEB-94	7.04	1.71	MS/CM
1586	GW00483GA	13-APR-94	7.17	2.16	MS/CM
1586	GW00877GA	26-MAY-94	7.45	2.12	MS/CM
1586	GW01097GA	29-JUL-94	7.00	2.09	MS/CM
1586	GW01467GA	13-OCT-94	7.04	1.90	MS/CM
1686	GW00141GA	27-JAN-94	7.44	2.33	MS/CM
1686	GW00506GA	11-APR-94	7.10	2.17	MS/CM
1686	GW00998GA	22-JUL-94	7.32	2.17	MS/CM
1686	GW01452GA	06-OCT-94	7.19	2.12	MS/CM
1786	GW00206GA	07-FEB-94	7.00	5.58	MS/CM
1786	GW00549GA	13-APR-94	7.08	5.47	MS/CM
1786	GW00878GA	26-MAY-94	7.19	6.18	MS/CM
1786	GW00931GA	01-JUL-94	6.74	5.56	MS/CM
1786	GW00933GA	05-JUL-94	6.90	5.44	MS/CM
1786	GW00938GA	07-JUL-94	6.8	5.81	MS/CM
1786	GW00940GA	08-JUL-94	6.57	5.54	MS/CM
1786	GW00949GA	11-JUL-94	6.93	5.84	MS/CM
1786	GW01098GA	04-AUG-94	6.77	6.62	MS/CM
1786	GW01621GA	20-OCT-94	6.59	6.30	MS/CM
2187	GW00120GA	03-FEB-94	6.71	2.94	MS/CM
2187	GW00701GA	03-MAY-94	6.94	3.20	MS/CM
2187	GW01141GA	08-AUG-94	6.86	2.67	MS/CM
2187	GW01653GA	26-OCT-94	6.75	3.02	MS/CM
2286	GW00342GA	01-MAR-94	7.80	0.55	MS/CM
2286	GW00560GA	21-APR-94	7.51	0.65	MS/CM
2286	GW00972GA	18-JUL-94	6.74	0.84	MS/CM
2286	GW01474GA	19-OCT-94	7.57	0.66	MS/CM
2287	GW00121GA	03-FEB-94	8.64	1.43	MS/CM
2287	GW00703GA	03-MAY-94	8.22	1.65	MS/CM
2287	GW01142GA	08-AUG-94	7.69	1.48	MS/CM
2287	GW01654GA	31-OCT-94	7.61	1.68	MS/CM
2386	GW00343GA	01-MAR-94	7.78	1.48	MS/CM
2386	GW00561GA	25-APR-94	7.03	1.71	MS/CM
2386	GW00973GA	18-JUL-94	7.69	1.48	MS/CM
2386	GW01475GA	25-OCT-94	7.59	1.48	MS/CM
2486	GW00463GA	08-APR-94	8.34	0.58	MS/CM
2586	GW00006GA	31-JAN-94	7.33	2.86	MS/CM

Appendix E-1
Solar Evaporation Ponds - Field Parameters, 1994

Well Number	Sample Number	Sample Date	pH	Specific Conductivity	
2586	GW00488GA	15-APR-94	7.15	2.90	MS/CM
2586	GW00999GA	20-JUL-94	7.13	2.67	MS/CM
2586	GW01455GA	06-OCT-94	7.55	2.90	MS/CM
2686	GW00005GA	14-JAN-94	7.11	1.97	MS/CM
2686	GW00464GA	08-APR-94	7.35	2.17	MS/CM
2686	GW01000GA	20-JUL-94	7.61	2.47	MS/CM
2686	GW01453GA	06-OCT-94	6.79	2.49	MS/CM
2786	GW00344GA	01-MAR-94	8.14	1.54	MS/CM
2786	GW00563GA	21-APR-94	8.00	1.53	MS/CM
2786	GW00975GA	18-JUL-94	8.10	1.38	MS/CM
2786	GW01473GA	24-OCT-94	8.00	1.40	MS/CM
2986	GW00158GA	06-JAN-94			US/CM
3086	GW00113GA	02-FEB-94	7.56	6.01	MS/CM
3086	GW00270GA	21-FEB-94	7.58	6.07	MS/CM
3086	GW00468GA	08-APR-94	7.26	5.18	MS/CM
3086	GW00970GA	20-JUL-94	7.40	4.60	MS/CM
3086	GW01454GA	06-OCT-94	7.42	5.25	MS/CM
3286	GW00114GA	02-FEB-94	7.78	0.95	MS/CM
3286	GW00540GA	19-APR-94	7.75	0.95	MS/CM
3286	GW01001GA	04-AUG-94	7.77	0.90	MS/CM
3286	GW01483GA	12-OCT-94	6.88	0.97	MS/CM
3386	GW01513GA	04-OCT-94			MS/CM
3486	GW00325GA	10-MAR-94	7.70	2.40	MS/CM
3486	GW00847GA	23-MAY-94	7.08	2.28	MS/CM
3486	GW01170GA	10-AUG-94	7.15	2.47	MS/CM
3586	GW00326GA	23-FEB-94	7.36	1.53	MS/CM
3586	GW00405GA	10-MAR-94	7.10	1.61	MS/CM
3586	GW00863GA	18-MAY-94	6.96	1.56	MS/CM
3586	GW01296GA	25-AUG-94	7.05	1.62	MS/CM
3686	GW00856GA	19-MAY-94	7.35	1.61	MS/CM
3686	GW00891GA	22-JUN-94	6.76	1.80	MS/CM
3887	GW00060GA	10-JAN-94			US/CM
3887	GW00494GA	11-APR-94	6.95	2.40	MS/CM
3887	GW01005GA	22-JUL-94	7.01	2.62	MS/CM
3987	GW00117GA	01-FEB-94	8.11	2.07	MS/CM
3987	GW00542GA	15-APR-94	7.89	2.19	MS/CM
3987	GW01165GA	08-AUG-94	7.58	1.96	MS/CM
3987	GW01486GA	11-OCT-94	7.70	1.95	MS/CM
5687	GW00346GA	01-MAR-94	7.64	1.80	MS/CM
5687	GW00562GA	21-APR-94	7.52	1.79	MS/CM
5687	GW00974GA	18-JUL-94	7.44	1.83	MS/CM
5687	GW01590GA	24-OCT-94	7.55	1.73	MS/CM
75992	GW00399GA	09-MAR-94	7.29	1.63	MS/CM
75992	GW00597GA	20-APR-94	7.29	1.26	MS/CM
75992	GW01240GA	17-AUG-94	6.97	1.19	MS/CM
75992	GW01446GA	14-SEP-94	7.24	1.20	MS/CM
75992	GW01608GA	19-OCT-94	7.31	1.26	MS/CM
76292	GW00107GA	07-FEB-94	7.04	0.73	MS/CM
76292	GW00595GA	28-APR-94	6.99	0.49	MS/CM
76292	GW01269GA	23-AUG-94	6.91	0.76	MS/CM
76292	GW01609GA	24-OCT-94	7.07	0.73	MS/CM
B208089	GW00032GA	17-JAN-94	7.81	1.13	MS/CM
B208089	GW00507GA	11-APR-94	7.15	1.19	MS/CM
B208089	GW01002GA	26-JUL-94	7.33	1.36	MS/CM
B208089	GW01462GA	06-OCT-94	6.83	1.21	MS/CM
B208189	GW00043GA	19-JAN-94	6.91	1.05	MS/CM
B208189	GW00508GA	11-APR-94	7.31	0.79	MS/CM
B208189	GW01003GA	29-JUL-94	7.00	1.03	MS/CM
B208189	GW01463GA	06-OCT-94	7.29	0.82	MS/CM
B208289	GW00047GA	20-JAN-94	7.81	3.90	MS/CM
B208289	GW00546GA	13-APR-94	7.86	4.19	MS/CM

Appendix E-1
Solar Evaporation Ponds - Field Parameters, 1994

Well Number	Sample Number	Sample Date	pH	Specific Conductivity	
B208289	GW01489GA	10-OCT-94	7.51	4.48	MS/CM
B208689	GW00044GA	20-JAN-94	7.15	4.73	MS/CM
B208689	GW00964GA	15-JUL-94	7.24	4.38	MS/CM
B208689	GW01464GA	11-OCT-94	7.27	4.99	MS/CM
B210489	GW00045GA	20-JAN-94	7.20	6.40	MS/CM
B210489	GW00509GA	12-APR-94	7.14	6.36	MS/CM
B210489	GW01116GA	10-AUG-94	7.07	5.80	MS/CM
B210489	GW01591GA	17-OCT-94	7.04	6.45	MS/CM
P207389	GW00104GA	03-FEB-94	7.20	0.77	MS/CM
P207389	GW00489GA	15-APR-94	7.25	0.86	MS/CM
P207389	GW00956GA	14-JUL-94	7.48	0.93	MS/CM
P207389	GW01468GA	19-OCT-94	7.35	0.91	MS/CM
P207589	GW00105GA	25-JAN-94	8.12	1.25	MS/CM
P207589	GW00465GA	07-APR-94	8.22	1.17	MS/CM
P207589	GW01061GA	04-AUG-94	8.06	1.19	MS/CM
P207589	GW01469GA	13-OCT-94	7.98	1.24	MS/CM
P207689	GW00097GA	03-FEB-94	7.97	1.03	MS/CM
P207689	GW00097GALR	03-FEB-94			US/CM
P207689	GW00575GA	20-APR-94	7.60	0.97	MS/CM
P207689	GW01054GA	22-JUL-94	8.42	1.67	MS/CM
P207689	GW01465GA	10-OCT-94	6.90	1.71	MS/CM
P207789	GW00013GA	18-JAN-94	8.06	1.88	MS/CM
P207789	GW00495GA	12-APR-94	8.46	1.90	MS/CM
P207789	GW00593GA	20-APR-94	8.13	1.96	MS/CM
P207789	GW01062GA	29-JUL-94	8.21	1.79	MS/CM
P207789	GW01456GA	06-OCT-94	8.02	1.89	MS/CM
P207889	GW00011GA	18-JAN-94	8.14	2.54	MS/CM
P207889	GW00496GA	11-APR-94	7.48	1.76	MS/CM
P207889	GW00971GA	22-JUL-94	8.06	2.55	MS/CM
P207889	GW01528GA	04-OCT-94			MS/CM
P207989	GW00012GA	18-JAN-94	8.08	1.83	MS/CM
P207989	GW00497GA	11-APR-94	8.08	1.94	MS/CM
P207989	GW01063GA	02-AUG-94	7.85	1.89	MS/CM
P207989	GW01476GA	10-OCT-94	7.82	1.90	MS/CM
P208889	GW00118GA	07-FEB-94	8.60	2.08	MS/CM
P208889	GW00541GA	15-APR-94	8.29	2.17	MS/CM
P208889	GW01064GA	02-AUG-94	8.37	1.94	MS/CM
P208889	GW01487GA	12-OCT-94	8.37	2.11	MS/CM
P208989	GW00115GA	02-FEB-94	7.08	13.40	MS/CM
P208989	GW00550GA	18-APR-94	6.82	13.76	MS/CM
P208989	GW01035GA	25-JUL-94	7.04	15.20	MS/CM
P208989	GW01484GA	26-OCT-94	7.05	13.18	MS/CM
P209089	GW00016GA	24-JAN-94	7.77	0.95	MS/CM
P209089	GW00466GA	08-APR-94	7.94	0.84	MS/CM
P209089	GW01065GA	08-AUG-94	7.74	1.11	MS/CM
P209089	GW01470GA	19-OCT-94	7.77	0.96	MS/CM
P209189	GW01740GA	10-NOV-94	6.94	0.56	MS/CM
P209289	GW00015GA	25-JAN-94	8.80	1.21	MS/CM
P209289	GW00490GA	11-APR-94	7.86	1.16	MS/CM
P209289	GW01066GA	04-AUG-94	7.58	1.09	MS/CM
P209289	GW01529GA	04-OCT-94			MS/CM
P209389	GW00007GA	13-JAN-94	6.88	0.91	MS/CM
P209389	GW00008GA	25-JAN-94	7.01	0.88	MS/CM
P209389	GW00491GA	11-APR-94	7.13	0.91	MS/CM
P209389	GW00957GA	13-JUL-94	7.10	0.94	MS/CM
P209389	GW01471GA	17-OCT-94	6.52	0.94	MS/CM
P209489	GW00014GA	24-JAN-94	6.90	3.03	MS/CM
P209489	GW00492GA	12-APR-94	6.65	2.23	MS/CM
P209489	GW00958GA	13-JUL-94	7.05	2.80	MS/CM
P209489	GW01472GA	17-OCT-94	6.66	2.72	MS/CM
P209589	GW00119GA	07-FEB-94	7.12	TOO HIGH	MS/CM

Appendix E-1
Solar Evaporation Ponds - Field Parameters, 1994

Well Number	Sample Number	Sample Date	pH	Specific Conductivity	
P209589	GW00553GA	18-APR-94	6.69	TOO HIGH	MS/CM
P209589	GW01080GA	02-AUG-94	6.99	TOO HIGH	MS/CM
P209589	GW01488GA	12-OCT-94	6.99	TOO HIGH	MS/CM
P209689	GW00009GA	18-JAN-94	9.06	1.35	MS/CM
P209689	GW00498GA	15-APR-94	7.93	1.42	MS/CM
P209689	GW01067GA	29-JUL-94	8.19	1.32	MS/CM
P209689	GW01477GA	10-OCT-94	7.56	1.33	MS/CM
P209789	GW00010GA	31-JAN-94	7.58	1.48	MS/CM
P209789	GW00576GA	26-APR-94	7.49	0.90	MS/CM
P209789	GW00576GALR	26-APR-94			US/CM
P209789	GW01119GA	29-JUL-94	7.33	1.02	MS/CM
P209789	GW01119GALR	29-JUL-94			US/CM
P209789	GW01587GA	12-OCT-94	7.28	1.46	MS/CM
P209889	GW00116GA	27-JAN-94	7.53	TOO HIGH	MS/CM
P209889	GW00552GA	18-APR-94	7.40	TOO HIGH	FS/CM
P209889	GW01036GA	25-JUL-94	7.33	TOO HIGH	MS/CM
P209889	GW01485GA	17-OCT-94	7.10	19.38	MS/CM
P210089	GW00139GA	27-JAN-94	7.39	4.62	MS/CM
P210089	GW00505GA	11-APR-94	7.04	4.66	MS/CM
P210089	GW01068GA	04-AUG-94	7.26	4.45	MS/CM
P210089	GW01461GA	17-OCT-94	7.11	4.87	MS/CM
P210189	GW00106GA	03-FEB-94	7.60	1.01	MS/CM
P210189	GW00106GALR	04-FEB-94			US/CM
P210189	GW00574GA	28-APR-94	7.30	1.06	MS/CM
P210189	GW00953GA	14-JUL-94	7.30	1.03	MS/CM
P210189	GW01586GA	20-OCT-94	7.28	0.98	MS/CM
P218089	GW00017GA	26-JAN-94	7.75	0.84	MS/CM
P218389	GW00112GA	10-FEB-94	6.91	0.67	MS/CM
P218389	GW00655GA	28-APR-94	7.14	.60	MS/CM
P218389	GW01069GA	02-AUG-94	7.01	0.98	MS/CM
P218389	GW01482GA	10-OCT-94	7.08	1.08	MS/CM
P219189	GW00128GA	07-FEB-94	7.92	2.65	MS/CM
P219189	GW00656GA	28-APR-94	7.99	3.09	MS/CM
P219189	GW01177GA	09-AUG-94	7.58	2.75	MS/CM
P219189	GW01658GA	26-OCT-94	7.64	2.70	MS/CM
P219489	GW00111GA	10-FEB-94	7.30	0.78	MS/CM
P219489	GW00652GA	27-APR-94	7.47	0.79	MS/CM
P219489	GW01070GA	02-AUG-94	7.53	0.68	MS/CM
P219489	GW01481GA	10-OCT-94	7.47	0.66	MS/CM
P219589	GW00110GA	10-FEB-94	7.56	1.48	MS/CM
P219589	GW00651GA	27-APR-94	7.37	1.61	MS/CM
P219589	GW01071GA	02-AUG-94	8.02	1.43	MS/CM
P219589	GW01480GA	12-OCT-94	7.28	1.50	MS/CM

APPENDIX E-2

WEST SPRAY FIELD - FIELD PARAMETERS, 1994

Appendix E-2
West Spray Field - Field Parameters, 1994

Well Number	Sample Number	Sample Date	pH	Specific Conductivity	
0190	GW00177GA	03-FEB-94	7.15	0.25	MS/CM
0190	GW00707GA	02-MAY-94	6.76	0.20	MS/CM
0190	GW01261GA	24-AUG-94	6.72	0.24	MS/CM
0190	GW01710GA	07-NOV-94	6.78	0.21	MS/CM
0390	GW00179GA	09-FEB-94	7.05	0.21	MS/CM
0390	GW00709GA	03-MAY-94	7.29	0.21	MS/CM
0390	GW01263GA	06-SEP-94	7.31	0.24	MS/CM
0390	GW01712GA	07-NOV-94	6.90	0.21	MS/CM
1490	GW00180GA	03-FEB-94	7.16	0.17	MS/CM
1490	GW00710GA	03-MAY-94	6.95	0.16	MS/CM
1490	GW01264GA	24-AUG-94	7.18	0.17	MS/CM
1490	GW01713GA	07-NOV-94	6.97	0.18	MS/CM
46192	GW00354GA	02-MAR-94	7.29	0.20	MS/CM
46192	GW00511GA	13-APR-94	7.24	0.26	MS/CM
46192	GW01007GA	18-AUG-94	7.16	0.24	MS/CM
46192	GW01506GA	18-OCT-94	7.26	0.21	MS/CM
46292	GW00355GA	03-MAR-94	6.99	0.20	MS/CM
46292	GW00584GA	21-APR-94	7.20	0.22	MS/CM
46292	GW01100GA	16-AUG-94	6.95	0.20	MS/CM
46292	GW01502GA	19-OCT-94	7.08	0.20	MS/CM
46392	GW00358GA	02-MAR-94	7.47	0.39	MS/CM
46392	GW00602GA	20-APR-94	7.30	0.26	MS/CM
46392	GW01099GA	18-AUG-94	7.59	0.24	MS/CM
46392	GW01505GA	24-OCT-94	7.52	0.27	MS/CM
46492	GW00151GA	27-JAN-94	7.18	0.17	MS/CM
46492	GW00880GA	25-MAY-94	7.32	0.16	MS/CM
46492	GW01297GA	30-AUG-94	7.20	0.16	MS/CM
46492	GW01752GA	11-NOV-94	6.74	0.16	MS/CM
4686	GW00150GA	07-FEB-94	7.86	0.46	MS/CM
4686	GW00756GA	13-JUN-94	7.49	0.41	MS/CM
4686	GW01120GA	07-AUG-94	7.98	0.38	MS/CM
4786	GW00094GA	24-JAN-94	7.26	0.18	MS/CM
4786	GW00869GA	13-JUN-94	6.79	0.18	MS/CM
4786	GW01043GA	27-JUL-94	7.05	0.22	MS/CM
4786	GW01644GA	09-NOV-94	7.36	0.19	MS/CM
4886	GW00136GA	24-JAN-94	7.97	0.39	MS/CM
4886	GW00510GA	12-APR-94	7.69	0.41	MS/CM
4886	GW01103GA	11-AUG-94	8.50	0.38	MS/CM
4886	GW01459GA	19-OCT-94	8.21	0.37	MS/CM
4986	GW00100GA	20-JAN-94	7.11	0.24	MS/CM
4986	GW00484GA	14-APR-94	7.02	0.28	MS/CM
4986	GW01081GA	02-AUG-94	6.81	0.24	MS/CM
50194	GW01336GA	29-AUG-94	7.11	0.17	MS/CM
50194	GW01383GA	01-SEP-94	7.24	0.17	MS/CM
50294	GW01343GA	06-SEP-94	7.12	0.24	MS/CM
50394	GW01344GA	06-SEP-94	7.52	0.16	MS/CM
50694	GW01345GA	30-AUG-94	7.37	0.16	MS/CM
50694	GW01384GA	01-SEP-94	7.31	0.24	MS/CM
50794	GW01339GA	31-AUG-94	6.76	0.31	MS/CM
5086	GW00209GA	08-FEB-94	7.08	0.31	MS/CM
5086	GW00580GA	19-APR-94	6.92	0.15	MS/CM
5086	GW01082GA	28-JUL-94	7.23	0.26	MS/CM
5086	GW01498GA	10-OCT-94	6.79	0.27	MS/CM
50894	GW01340GA	30-AUG-94	8.00	0.24	MS/CM
50894	GW01385GA	01-SEP-94	7.28	0.21	MS/CM
50994	GW01341GA	30-AUG-94	7.40	0.98	MS/CM
50994	GW01386GA	01-SEP-94	7.42	0.92	MS/CM
51094	GW01342GA	30-AUG-94	6.97	0.27	MS/CM
51094	GW01387GA	01-SEP-94	7.30	0.27	MS/CM
51194	GW01444GA	19-SEP-94	7.78	0.48	MS/CM
51294	GW01347GA	31-AUG-94	7.29	0.32	MS/CM

Appendix E-2
West Spray Field - Field Parameters, 1994

Well Number	Sample Number	Sample Date	pH	Specific Conductivity	
51494	GW01348GA	29-AUG-94	7.45	0.19	MS/CM
51494	GW01388GA	06-SEP-94	7.29	0.22	MS/CM
51594	GW01445GA	19-SEP-94	7.49	0.29	MS/CM
5186	GW00134GA	24-JAN-94	6.89	0.19	MS/CM
5186	GW00474GA	07-APR-94	6.42	0.19	MS/CM
5186	GW01085GA	03-AUG-94	6.51	0.16	MS/CM
5186	GW01493GA	11-OCT-94	7.12	0.22	MS/CM
5286	GW00020GA	17-JAN-94	10.53	0.29	MS/CM
5286	GW01321GA	31-AUG-94			MS/CM
5686	GW00330GA	24-FEB-94	7.28	0.34	MS/CM
5686	GW00837GA	17-MAY-94	7.22	0.34	MS/CM
5686	GW01250GA	17-AUG-94	7.05	0.34	MS/CM
5686	GW01661GA	25-OCT-94	7.02	0.26	MS/CM
B110889	GW00133GA	24-JAN-94	7.33	0.27	MS/CM
B110889	GW00485GA	15-APR-94	7.16	0.30	MS/CM
B110889	GW01089GA	04-AUG-94	7.39	0.27	MS/CM
B110889	GW01492GA	17-OCT-94	7.10	0.28	MS/CM
B110989	GW00132GA	25-JAN-94	7.06	0.19	MS/CM
B110989	GW00486GA	15-APR-94	7.06	0.23	MS/CM
B110989	GW01112GA	03-AUG-94	7.13	0.21	MS/CM
B110989	GW01491GA	12-OCT-94	7.20	0.24	MS/CM
B111189	GW00131GA	25-JAN-94	7.05	0.16	MS/CM
B111189	GW00487GA	12-APR-94	6.90	0.17	MS/CM
B111189	GW01113GA	29-JUL-94	6.86	0.18	MS/CM
B111189	GW01490GA	11-OCT-94	7.27	0.18	MS/CM
B410589	GW00556GA	14-APR-94	7.11	0.36	MS/CM
B410589	GW01090GA	04-AUG-94	7.68	0.34	MS/CM
B410589	GW01501GA	11-OCT-94	7.37	0.24	MS/CM
B410689	GW00137GA	25-JAN-94	7.25	0.27	MS/CM
B410689	GW00554GA	15-APR-94	6.41	0.31	MS/CM
B410689	GW01091GA	09-AUG-94	7.30	0.26	MS/CM
B410689	GW01495GA	10-OCT-94	7.35	0.32	MS/CM
B410789	GW00207GA	10-FEB-94	7.40	0.35	MS/CM
B410789	GW00207GALR	11-FEB-94			US/CM
B410789	GW00404GA	10-MAR-94	7.14	0.36	MS/CM
B410789	GW00583GA	19-APR-94	7.46	0.37	MS/CM
B410789	GW01092GA	09-AUG-94	7.17	0.33	MS/CM
B410789	GW01496GA	10-OCT-94	7.27	0.40	MS/CM
B411289	GW00242GA	15-FEB-94	6.78	0.14	MS/CM
B411289	GW00579GA	20-APR-94	6.90	0.15	MS/CM
B411289	GW01117GA	09-AUG-94	6.92	0.16	MS/CM
B411289	GW01460GA	17-OCT-94	6.97	0.13	MS/CM
B411389	GW00135GA	24-JAN-94	6.85	0.16	MS/CM
B411389	GW00547GA	14-APR-94	6.82	0.15	MS/CM
B411389	GW01118GA	11-AUG-94	7.10	0.14	MS/CM
B411389	GW01494GA	11-OCT-94	7.05	0.15	MS/CM
P114389	GW00168GA	07-FEB-94	7.02	1.24	MS/CM
P114389	GW00659GA	26-APR-94	6.78	1.21	MS/CM
P114389	GW01194GA	15-AUG-94	6.60	1.20	MS/CM
P114389	GW01664GA	03-NOV-94	6.82	1.28	MS/CM
P114489	GW00065GA	04-JAN-94			US/CM
P114489	GW00170GA	14-FEB-94	6.62	0.31	MS/CM
P114489	GW00660GA	26-APR-94	7.14	0.36	MS/CM
P114489	GW01195GA	15-AUG-94	6.73	0.31	MS/CM
P114489	GW01665GA	09-NOV-94	6.63	0.32	MS/CM
P114589	GW00171GA	14-FEB-94	7.22	0.35	MS/CM
P114589	GW00661GA	26-APR-94	7.44	0.26	MS/CM
P114589	GW01196GA	15-AUG-94	7.30	0.24	MS/CM
P114589	GW01666GA	03-NOV-94	7.34	0.28	MS/CM
P114989	GW00175GA	09-FEB-94	6.89	0.26	MS/CM
P114989	GW00663GA	25-APR-94	7.00	0.29	MS/CM

Appendix E-2
West Spray Field - Field Parameters, 1994

Well Number	Sample Number	Sample Date	pH	Specific Conductivity	
P114989	GW00876GA	19-MAY-94	7.61	0.31	MS/CM
P114989	GW01198GA	15-AUG-94	7.18	0.28	MS/CM
P114989	GW01276GA	12-SEP-94	7.25	0.24	MS/CM
P114989	GW01668GA	03-NOV-94	7.28	0.27	MS/CM
P115089	GW00176GA	09-FEB-94	6.69	0.35	MS/CM
P115089	GW00664GA	28-APR-94	6.77	0.39	MS/CM
P115089	GW01215GA	15-AUG-94	6.57	0.38	MS/CM
P115089	GW01669GA	08-NOV-94	6.69	0.38	MS/CM
P415889	GW00187GA	14-FEB-94	6.71	0.40	MS/CM
P415889	GW00662GA	26-APR-94	6.62	0.42	MS/CM
P415889	GW01214GA	15-AUG-94	6.61	0.44	MS/CM
P415889	GW01667GA	07-NOV-94	6.55	0.42	MS/CM
P415989	GW00188GA	10-FEB-94	6.83	0.49	MS/CM
P415989	GW00665GA	28-APR-94	6.90	0.51	MS/CM
P415989	GW01216GA	16-AUG-94	6.72	0.52	MS/CM
P415989	GW01670GA	04-NOV-94	7.00	0.52	MS/CM
P416089	GW00189GA	15-FEB-94	6.47	0.38	MS/CM
P416089	GW00684GA	27-APR-94	6.61	0.49	MS/CM
P416089	GW01183GA	11-AUG-94	6.51	0.39	MS/CM
P416089	GW01684GA	07-NOV-94	6.27	0.44	MS/CM
P416189	GW00190GA	17-FEB-94	6.88	0.77	MS/CM
P416189	GW00716GA	05-MAY-94	7.13	0.59	MS/CM
P416189	GW01224GA	23-AUG-94	6.71	0.83	MS/CM
P416189	GW01686GA	31-OCT-94	6.83	0.80	MS/CM
P416289	GW00196GA	10-FEB-94	7.88	0.73	MS/CM
P416289	GW00686GA	04-MAY-94	8.14	0.66	MS/CM
P416289	GW01207GA	16-AUG-94	8.32	0.69	MS/CM
P416289	GW01689GA	07-NOV-94	8.09	0.65	MS/CM
P416389	GW00197GA	10-FEB-94	6.76	0.47	MS/CM
P416389	GW00685GA	02-MAY-94	6.95	0.48	MS/CM
P416389	GW01208GA	17-AUG-94	7.08	0.52	MS/CM
P416389	GW01685GA	03-NOV-94	6.91	0.51	MS/CM
P416489	GW00198GA	10-FEB-94	7.80	0.75	MS/CM
P416489	GW00687GA	26-APR-94	7.00	0.78	MS/CM
P416489	GW01209GA	16-AUG-94	7.52	0.79	MS/CM
P416489	GW01690GA	08-NOV-94	7.37	0.75	MS/CM
P416589	GW00199GA	14-FEB-94	7.07	0.47	MS/CM
P416589	GW00688GA	05-MAY-94	7.05	0.50	MS/CM
P416589	GW01210GA	18-AUG-94	7.12	0.48	MS/CM
P416589	GW01691GA	07-NOV-94	6.89	0.45	MS/CM
P416989	GW00203GA	21-FEB-94	8.53	0.52	MS/CM
P416989	GW00697GA	03-MAY-94	8.55	0.45	MS/CM
P416989	GW01227GA	16-AUG-94	8.60	0.44	MS/CM
P416989	GW01701GA	31-OCT-94	8.33	0.50	MS/CM

APPENDIX E-3

PRESENT LANDFILL - FIELD PARAMETERS, 1994

Appendix E-3
Present Landfill - Field Parameters, 1994

Well Number	Sample Number	Sample Date	pH	Specific Conductivity	
0586	GW00340GA	03-MAR-94	7.72	4.2	MS/CM
0586	GW00616GA	03-MAY-94	7.65	1.42	MS/CM
0586	GW01087GA	07-AUG-94	7.34	5.76	MS/CM
0586	GW01238GA	14-SEP-94	7.46	5.43	MS/CM
0686	GW01285GA	23-AUG-94	7.37	6.44	MS/CM
0786	GW00028GA	17-JAN-94	7.12	2.66	MS/CM
0786	GW00502GA	11-APR-94	7.25	2.40	MS/CM
0786	GW01049GA	27-JUL-94	6.64	2.57	MS/CM
0886	GW00029GA	17-JAN-94			US/CM
0886	GW00102GA	25-JAN-94	9.74	0.48	MS/CM
0886	GW00503GA	11-APR-94	9.73	0.48	MS/CM
0886	GW01094GA	02-AUG-94	9.50	0.45	MS/CM
0886	GW01558GA	17-OCT-94	9.71	0.48	MS/CM
0986	GW00341GA	28-FEB-94	7.82	0.48	MS/CM
0986	GW00566GA	18-APR-94	7.72	0.43	MS/CM
0986	GW01050GA	07-AUG-94	8.14	0.47	MS/CM
0986	GW01559GA	12-OCT-94	8.08	0.43	MS/CM
1086	GW00035GA	18-JAN-94	6.73	0.16	MS/CM
1086	GW00272GA	21-FEB-94	6.79	0.24	MS/CM
1086	GW00481GA	11-APR-94	6.19	0.26	MS/CM
1086	GW01095GA	02-AUG-94	6.37	0.16	MS/CM
1086	GW01560GA	13-OCT-94	6.25	0.26	MS/CM
4087	GW00951GA	14-JUL-94	7.90	2.63	MS/CM
4087	GW01072GA	28-JUL-94	7.66	3.01	MS/CM
4087	GW01258GA	25-AUG-94			MS/CM
4087	GW01525GA	03-OCT-94			MS/CM
4187	GW00042GA	25-JAN-94	7.04	3.45	MS/CM
4187	GW00500GA	13-APR-94	7.00	3.42	MS/CM
4187	GW01051GA	02-AUG-94	6.94	3.48	MS/CM
4187	GW01563GA	17-OCT-94	6.98	3.41	MS/CM
4287	GW00031GA	18-JAN-94	7.24	0.67	MS/CM
4287	GW00835GA	17-MAY-94	7.91	0.59	MS/CM
5887	GW00036GA	18-JAN-94	7.11	0.25	MS/CM
5887	GW00473GA	07-APR-94	7.04	0.22	MS/CM
5887	GW01052GA	27-JUL-94	6.44	0.21	MS/CM
5887	GW01562GA	13-OCT-94	6.47	0.25	MS/CM
6087	GW00215GA	14-FEB-94	6.42	0.22	MS/CM
6087	GW00557GA	14-APR-94	5.75	0.21	MS/CM
6087	GW01104GA	09-AUG-94	6.39	0.21	MS/CM
6087	GW01234GA	18-AUG-94	6.40	0.25	MS/CM
6087	GW01583GA	13-OCT-94	6.30	0.25	MS/CM
6187	GW00138GA	25-JAN-94	6.33	0.20	MS/CM
6187	GW00578GA	19-APR-94	6.24	0.21	MS/CM
6187	GW01107GA	10-AUG-94	6.12	0.20	MS/CM
6187	GW01239GA	18-AUG-94	6.17	0.23	MS/CM
6187	GW01571GA	12-OCT-94	6.26	0.24	MS/CM
6287	GW01088GA	03-AUG-94	6.10	0.21	MS/CM
6487	GW00347GA	28-FEB-94	6.63	0.57	MS/CM
6487	GW00567GA	18-APR-94	6.29	0.53	MS/CM
6487	GW00976GA	20-JUL-94	6.23	0.64	MS/CM
6487	GW01575GA	13-OCT-94	5.80	0.53	MS/CM
6587	GW00348GA	28-FEB-94	6.63	0.35	MS/CM
6587	GW00568GA	19-APR-94	6.61	0.31	MS/CM
6587	GW01108GA	15-AUG-94	6.52	0.30	MS/CM
6587	GW01576GA	14-OCT-94	6.14	0.32	MS/CM
6687	GW00349GA	28-FEB-94	7.19	0.92	MS/CM
6687	GW00569GA	18-APR-94	6.38	1.28	MS/CM
6687	GW00977GA	26-JUL-94	6.35	0.72	MS/CM
6687	GW01577GA	13-OCT-94	6.29	0.60	MS/CM
6887	GW00147GA	27-JAN-94	6.54	0.31	MS/CM
6887	GW00537GA	15-APR-94	6.53	0.32	MS/CM

Appendix E-3
Present Landfill - Field Parameters, 1994

Well Number	Sample Number	Sample Date	pH	Specific Conductivity	
6887	GW01131GA	02-AUG-94	6.45	0.28	MS/CM
6887	GW01564GA	18-OCT-94	6.18	0.31	MS/CM
70093	GW00359GA	04-MAR-94	6.28	0.20	MS/CM
70093	GW00359GA	04-MAR-94	6.16	0.20	MS/CM
70093	GW00359GA	07-MAR-94	6.28	0.20	MS/CM
70093	GW00359GA	07-MAR-94	6.16	0.20	MS/CM
70093	GW00633GA	28-APR-94	5.95	0.23	MS/CM
70093	GW01306GA	29-AUG-94	6.03	0.20	MS/CM
70093	GW01623GA	31-OCT-94	5.88	0.20	MS/CM
70193	GW00360GA	04-MAR-94	6.72	0.22	MS/CM
70193	GW00360GA	04-MAR-94	6.72	0.22	MS/CM
70193	GW00360GA	04-MAR-94	7.16	0.25	MS/CM
70193	GW00360GA	04-MAR-94	7.16	0.25	MS/CM
70193	GW00634GA	28-APR-94	6.98	0.26	MS/CM
70193	GW01307GA	25-AUG-94	6.72	0.26	MS/CM
70193	GW01624GA	01-NOV-94	6.44	0.20	MS/CM
70293	GW00428GA	14-MAR-94	8.12	0.41	MS/CM
70293	GW00635GA	21-APR-94	7.85	0.41	US/CM
70293	GW01229GA	22-AUG-94	8.01	0.43	MS/CM
70293	GW01625GA	24-OCT-94	7.92	0.44	MS/CM
70393	GW00429GA	17-MAR-94	6.57	0.25	MS/CM
70393	GW00452GA	21-MAR-94	6.42	0.18	MS/CM
70393	GW00636GA	04-MAY-94	6.66	0.20	MS/CM
70393	GW00960GA	19-JUL-94	6.39	0.21	MS/CM
70393	GW01626GA	31-OCT-94	6.48	0.26	MS/CM
70493	GW00430GA	14-MAR-94	7.48	0.30	MS/CM
70493	GW00637GA	06-JUN-94	7.14	0.28	MS/CM
70493	GW00918GA	21-JUN-94	7.24	0.25	MS/CM
70493	GW01308GA	25-AUG-94	7.32	0.31	MS/CM
70493	GW01627GA	24-OCT-94	7.31	0.40	MS/CM
70593	GW00431GA	14-MAR-94	8.18	0.42	MS/CM
70593	GW00638GA	23-MAY-94	8.01	0.40	MS/CM
70593	GW01309GA	30-AUG-94	7.75	0.42	MS/CM
70593	GW01628GA	24-OCT-94	8.28	0.41	MS/CM
70693	GW00361GA	04-MAR-94	6.77	0.25	MS/CM
70693	GW00361GA	04-MAR-94	6.21	0.22	MS/CM
70693	GW00361GA	04-MAR-94	6.21	0.22	MS/CM
70693	GW00361GA	04-MAR-94	6.77	0.25	MS/CM
70693	GW00639GA	28-APR-94	6.24	0.30	MS/CM
70693	GW01310GA	25-AUG-94	6.17	0.27	MS/CM
70693	GW01629GA	27-OCT-94	6.19	0.24	MS/CM
7087	GW00037GA	20-JAN-94	7.86	0.82	MS/CM
7087	GW00478GA	07-APR-94	7.51	0.70	MS/CM
7087	GW01053GA	27-JUL-94	7.58	0.82	MS/CM
7087	GW01573GA	17-OCT-94	7.42	0.86	MS/CM
70893	GW00432GA	16-MAR-94	8.46	0.64	MS/CM
70893	GW00640GA	28-APR-94	8.86	0.73	MS/CM
70893	GW01311GA	29-AUG-94	8.20	0.64	MS/CM
70893	GW01630GA	31-OCT-94	8.40	0.56	MS/CM
71193	GW00433GA	14-MAR-94	6.77	0.38	MS/CM
71193	GW00641GA	21-APR-94	6.49	0.28	MS/CM
71193	GW01267GA	21-AUG-94	6.42	0.53	MS/CM
71193	GW01631GA	26-OCT-94	6.42	0.47	MS/CM
71493	GW00434GA	14-MAR-94	9.52	0.45	MS/CM
71493	GW00642GA	21-APR-94	10.95	1.09	MS/CM
71493	GW01268GA	21-AUG-94	10.20	0.42	MS/CM
71493	GW01632GA	27-OCT-94	9.02	0.31	MS/CM
71693	GW00435GA	17-MAR-94	6.48	2.55	MS/CM
71693	GW00643GA	09-JUN-94	6.48	0.77	MS/CM
71693	GW01312GA	12-SEP-94	6.44	1.30	MS/CM
71693	GW01633GA	26-OCT-94	6.71	1.40	MS/CM

Appendix E-3
Present Landfill - Field Parameters, 1994

Well Number	Sample Number	Sample Date	pH	Specific Conductivity	
7187	GW00212GA	10-FEB-94	7.47	0.46	MS/CM
7187	GW00577GA	19-APR-94	7.80	0.45	MS/CM
7187	GW01110GA	04-AUG-94	7.35	0.53	MS/CM
7187	GW01567GA	12-OCT-94	7.42	0.48	MS/CM
71893	GW00436GA	15-MAR-94	6.32	0.36	MS/CM
71893	GW00644GA	04-MAY-94	6.65	0.36	MS/CM
71893	GW01313GA	30-AUG-94	6.43	0.34	MS/CM
71893	GW01634GA	26-OCT-94	6.48	0.32	MS/CM
72093	GW00427GA	10-MAR-94	6.55	2.11	MS/CM
72093	GW00645GA	05-MAY-94	6.79	2.26	MS/CM
72093	GW00961GA	18-JUL-94	6.68	2.25	MS/CM
72093	GW01635GA	10-NOV-94	6.36	2.41	MS/CM
72293	GW00439GA	15-MAR-94	6.86	2.86	MS/CM
72293	GW00646GA	09-MAY-94	6.77	3.02	MS/CM
72293	GW00981GA	19-JUL-94	6.90	3.27	MS/CM
72293	GW01636GA	31-OCT-94	6.91	2.73	MS/CM
72393	GW00440GA	16-MAR-94	6.31	2.20	MS/CM
72393	GW00647GA	09-MAY-94	6.58	2.30	MS/CM
72393	GW00982GA	19-JUL-94	6.72	2.60	MS/CM
72393	GW01637GA	27-OCT-94	6.73	2.22	MS/CM
72493	GW00449GA	04-JAN-94			US/CM
7287	GW00350GA	28-FEB-94	6.94	0.48	MS/CM
7287	GW00570GA	18-APR-94	7.20	0.58	MS/CM
7287	GW01111GA	15-AUG-94	7.01	0.47	MS/CM
7287	GW01578GA	17-OCT-94	7.13	0.50	MS/CM
76992	GW00750GA	09-MAY-94	7.63	0.46	MS/CM
76992	GW01362GA	06-SEP-94	7.66	0.75	MS/CM
76992	GW01557GA	10-OCT-94			MS/CM
B106089	GW00351GA	28-FEB-94	6.54	0.64	MS/CM
B106089	GW00572GA	18-APR-94	6.19	0.37	MS/CM
B106089	GW01055GA	28-JUL-94	6.63	0.94	MS/CM
B106089	GW01570GA	17-OCT-94	6.48	1.05	MS/CM
B206289	GW00039GA	20-JAN-94	7.88	0.65	MS/CM
B206289	GW00504GA	11-APR-94	7.51	0.67	MS/CM
B206289	GW01056GA	03-AUG-94	7.57	0.70	MS/CM
B206289	GW01572GA	25-OCT-94	7.56	0.71	MS/CM
B206489	GW00352GA	28-FEB-94	7.27	0.54	MS/CM
B206489	GW00571GA	18-APR-94	7.24	0.60	MS/CM
B206489	GW01114GA	15-AUG-94	7.43	0.63	MS/CM
B206489	GW01574GA	12-OCT-94	7.98	0.80	MS/CM
B206589	GW00038GA	20-JAN-94	7.37	1.02	MS/CM
B206589	GW00543GA	13-APR-94	7.32	1.16	MS/CM
B206589	GW00959GA	20-JUL-94	7.42	1.03	MS/CM
B206589	GW01579GA	17-OCT-94	7.29	0.99	MS/CM
B206689	GW00040GA	25-JAN-94	7.92	1.05	MS/CM
B206689	GW00544GA	13-APR-94	7.94	0.97	MS/CM
B206689	GW01057GA	28-JUL-94	7.78	0.87	MS/CM
B206689	GW01580GA	17-OCT-94	7.81	1.18	MS/CM
B206789	GW00030GA	17-JAN-94	7.37	1.69	MS/CM
B206789	GW00548GA	13-APR-94	7.62	1.74	MS/CM
B206789	GW01058GA	07-AUG-94	7.70	1.64	MS/CM
B206789	GW01237GA	14-SEP-94	7.58	1.70	MS/CM
B206789	GW01581GA	12-OCT-94	7.55	1.93	MS/CM
B206889	GW00041GA	18-JAN-94	7.64	4.39	MS/CM
B206889	GW00551GA	13-APR-94	7.72	4.42	MS/CM
B206889	GW01059GA	02-AUG-94	7.67	4.44	MS/CM
B206889	GW01582GA	12-OCT-94	7.72	5.02	MS/CM
B206989	GW00026GA	17-JAN-94	7.40	5.71	MS/CM
B206989	GW00479GA	12-APR-94	7.41	5.56	MS/CM
B206989	GW01060GA	02-AUG-94	7.56	5.69	MS/CM
B206989	GW01568GA	12-OCT-94	7.24	5.64	MS/CM

Appendix E-3
Present Landfill - Field Parameters, 1994

Well Number	Sample Number	Sample Date	pH	Specific Conductivity	
B207089	GW00027GA	17-JAN-94	7.45	3.06	MS/CM
B207089	GW00103GA	27-JAN-94	7.32	3.49	MS/CM
B207089	GW00480GA	07-APR-94	7.30	3.04	MS/CM
B207089	GW01115GA	04-AUG-94	7.04	3.37	MS/CM
B207089	GW01569GA	12-OCT-94	7.25	3.18	MS/CM

APPENDIX F

SUMMARY OF STATISTICAL TECHNIQUES OF CC:CONTROL

APPENDIX F

This appendix summarizes the software package (CC:Control) that was used to generate trend plots and control charts for this report. Following this general discussion is 1) an explanation of the statistical methods used to produce trend plots and control charts, 2) an explanation for interpreting trend plots, and 3) an explanation for interpreting control charts.

CC:Control

CC:Control is PC-based software that addresses the need for managing and understanding data at facilities that monitor groundwater quality. CC:Control enables the following tasks to be performed:

- Rapid access to groundwater monitoring data by facility, sample point, parameter, and date
- Graphical displays of data histories and data distributions
- Detection of possible contamination according to RCRA Subtitles C and D statistical methodology regulations
- Automatic evaluation of statistically significant trends
- Automatic accounting for the following special characteristics of groundwater quality data:
    - Different units of measurement
    - Outlying data
    - Trends

- Seasonality
- Non-normally distributed data
- Different detection levels
- Missing data
- Serially correlated data
- Physical limitations (i.e. maximum dissolved concentrations)
- Peculiarities such as heteroscedasticity, nonlinearity, unequal spacing in time, and unequal numbers of replicates in each sampling period.

CC:Control is useful for deciding:

- Whether a trend is statistically significant
- Whether a contaminant plume really has been detected
- Whether new laboratory data fit into the previous monitoring history
- Where trends are occurring
- How consistent and reliable previous data are.

Graphical Evaluation of Chemical Data

Figure F-1 displays the decision tree used to construct graphics of chemical data with CC:Control. The following text expands the flowchart by describing the algorithms:

Basic Statistics

Before displaying a time-series graphic, CC:Control computes some basic statistics of the data. The software estimates the mean and standard deviation, while keeping track of the minimum and the maximum values. It also counts the total number of data values to be displayed and the percentage of values that are non-detects. No further statistical tests are applied to the data unless there are at least three data values (or a larger number specified by the user).

Outliers

Outliers are detected using the Hawkins one-outlier test for the normal distribution at the 5% significance level, as given in Mandansky (1988). With histories of more than 30 points, the critical value for 30 points is used, resulting in a slightly greater chance of identifying an outlier. Once outliers are identified, the mean and standard deviation are recomputed excluding them. In addition, all data values marked as outliers do not participate in any of the statistical tests that follow. Outliers are designated as filled circles on the trend and control charts.

Serial Correlation

Computing serial correlation is a problem, because data tend not to fall at equal intervals in time, and many histories may show different number of replicate values at different times. It is not indicated in the database whether these are duplicate samples, or whether they are replicate analyses of the same sample. Dealing with this problem appropriately requires a one-dimensional application of geostatistical "structural analysis" algorithms. CC:Control approximates the serial correlation by averaging replicates, then by computing it as if the resulting sequence of data values was obtained at equally spaced intervals. This technique is able to flag the histories with genuine serial correlation, but might also falsely detect a high serial correlation that is not really present. Because of this problem, the presence of a high serial correlation results in a warning message, but otherwise is ignored. Serial correlation is "high" when it is larger than $-\frac{1}{n}+\frac{Z}{\sqrt{n}}$ or smaller than $-\frac{1}{n}-\frac{Z}{\sqrt{n}}$, where Z, a number usually close to 2, is chosen so that independent normal random values will rarely produce such a high correlation.

Trends

Trends are identified by a least-squares linear fit to the data. If the slope is significantly different from 0 (as determined by two-tailed Student's t-test with 1% significance) then the fitted line is drawn and control-charting is not attempted. Not depicted in Figure F-1 is the fact that if more than 50% of the data values are non-detect, the fitted line is not drawn, but a message to that effect is displayed instead.

Control Charts

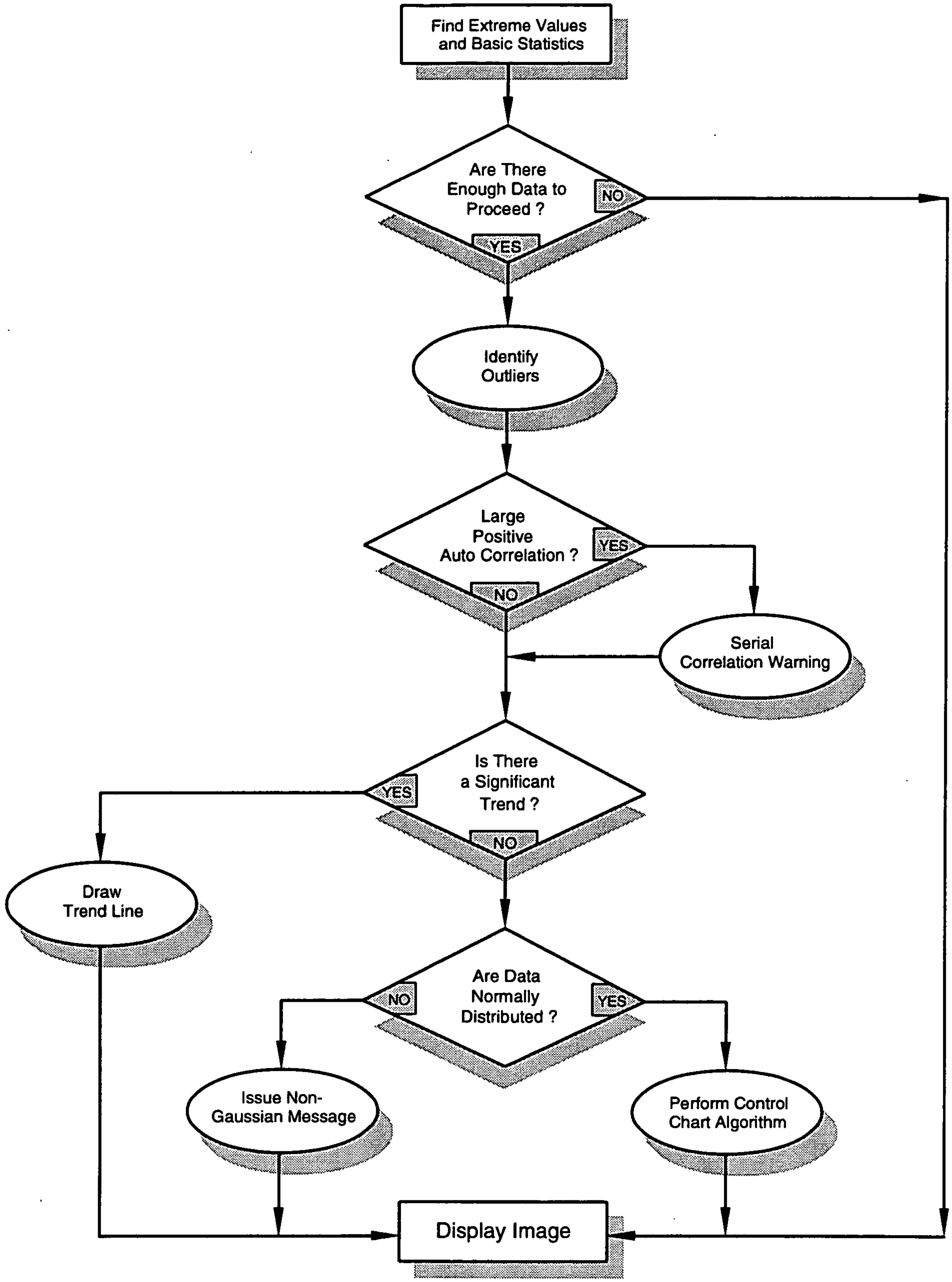
The control-chart algorithm is essentially that described in Evaluation of Control Chart Methodologies for RCRA Waste Sites (Starks and Flatman, 1989). It is a combined Shewhart-CUSUM methodology, with a learning period of 12 samples, followed by updating of the estimated sample mean and standard deviation 4, 8, 12, 20, and 32 samples beyond the learning stage. The Shewhart and CUSUM limits are also updated as described in the monograph.

Associated with each parameter in the database is information concerning the limits of physically realizable values. For example, a pH must lie between 0 and 14 and chemical concentrations must be positive. In those rare cases that a Shewhart limit would fall outside of this range, it is adjusted to fall just within. Moreover, only physically reasonable values are shown as y-axis labels.

CUSUM monitoring is done both for changes up (increase in mean) and changes down (decrease in mean), because unusual values can be expected to be too low as well as too high. Rather than record two separate CUSUM charts on each graphic, the larger of the two CUSUM values is plotted at each sample date. The accompanying Shewhart chart readily shows whether a CUSUM out-of-control (OOC) point is the result of a decrease or increase in the mean. The beginning CUSUM values are 0 (up and down). When either a CUSUM or Shewhart OOC condition is detected, both CUSUM values are reset to 0.

For control-charting to be meaningful, there should be no significant trend, seasonality, or serial correlation in the data. It is also unwise to chart data whose variability changes with time ("heteroscedastic" data). The algorithm is resistant to slight departures from the assumption of normal (Gaussian) data, but it is not resistant to the presence of outliers especially during the "learning period".

A fundamental prerequisite for the statistical tests is that the data be approximately normally distributed (for control charts) or, when trend is detected, that the regression residuals be normally distributed and uncorrelated. The algorithm tests for normality using a skewness test at a 1% level. A control chart is not produced for very non-normal data. Not depicted in Figure F-1 is the fact that if more than 25% of the data values are non-detect, the control chart is not tried, but a message to that effect is displayed instead.



U.S. Department of Energy
Rocky Flats Environmental Technology Site, Golden, Colorado
1994 Annual RCRA Groundwater Monitoring Report

Decision Tree for Graphical Evaluation of Data

Figure F-1

1/16/95 FILENAME : L:\PROJECTS\ROCKY\FIGURES\DRAFT\DECTREE.DWG

Key to Trend Charts

Numbers in parentheses ( ) are pointers into this key, not part of the graphics.

(1) Units of measurement for the y-axis values.

(2) The horizontal ticks on the y-axis correspond to the numerical values indicated to their left.

(3) These horizontal ticks correspond in a one-to-one fashion with the plotted points. Each is approximately the same height as the corresponding point, so that values may be more precisely read on the y-axis, and so that the distribution of values may be seen. To enhance this latter function, the actual height of a tick has been altered by a small random amount, which resolves overlapping values into a darker band.

(4) Sample point identifier.

(5) Parameter name.

(6),(7) When logarithms are used, the exponential (power of 10) of the log-linear regression slope is reported. This is best interpreted as a multiplicative rate of exponential growth, with a rate of 1 corresponding to no growth, rates greater than one with increase in values over time, and rates between 0 and 1 with a decrease in values over time.

(8) The least-squares (regression) line.

(9) Data sampled at a time interval less than 1.9 times the mean sampling interval are connected with this dashed line.

(10) The center of the "X" icon marks the datum. Data off the scale have the actual value displayed next to them.

(11) An outlier is represented with a filled circle. Outliers are shown, but are not used in computations.

(12) Values reported as below the detection limit are shown with this triangular symbol, if they are not otherwise flagged as outliers or OOC. In addition, a dash is shown at the level of the detection limit.

(13) The slightly longer vertical ticks correspond to the dates printed below them.

(14) The shorter vertical ticks are intermediate dates, falling at natural intervals.

(15) Copyright notice.

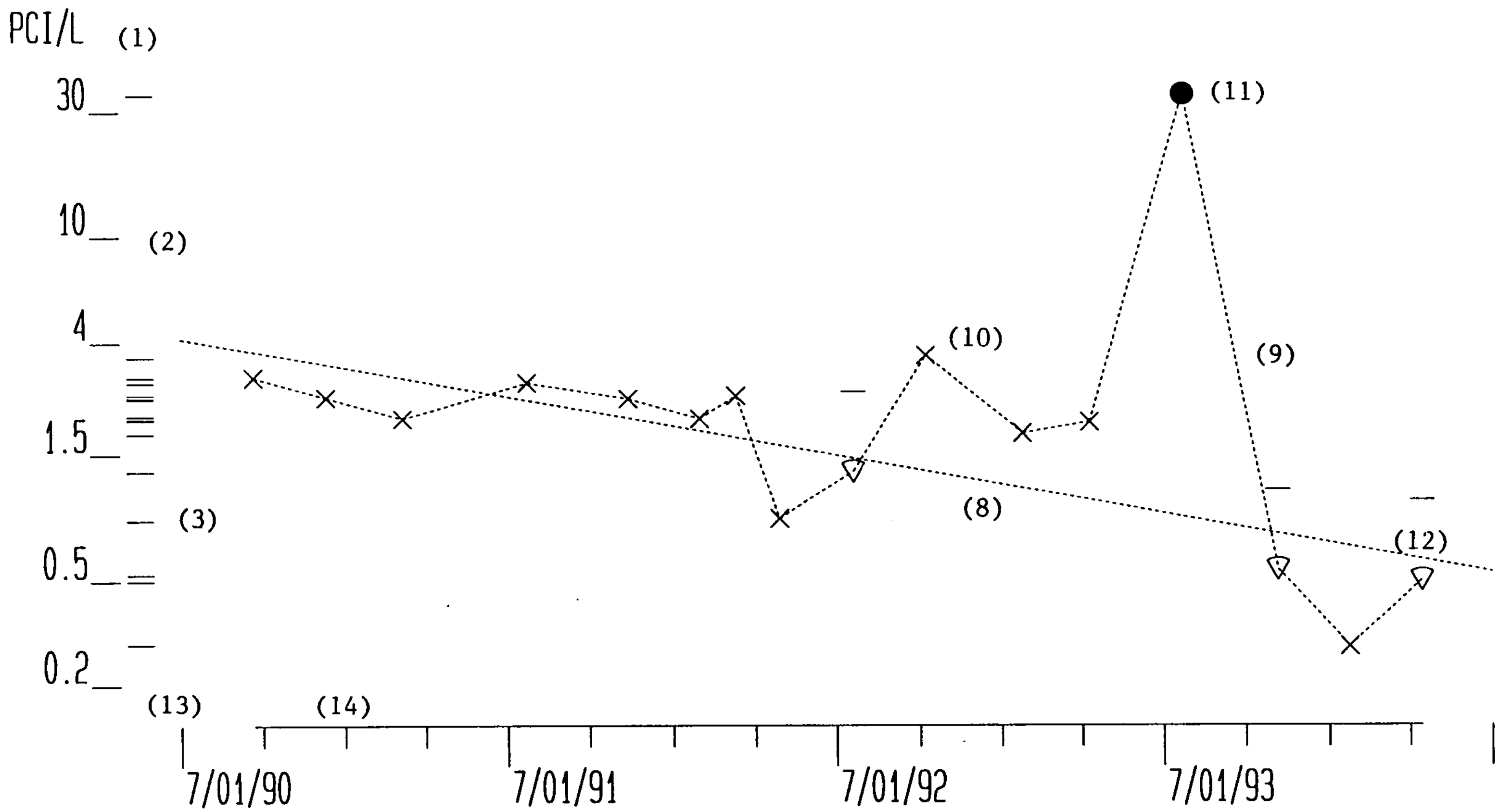
(16) Date that the computations were performed.

(17) Facility name.

(18) High serial correlation warning.

Well Example (4)

GROSS BETA (5)



Rate constant of regression line is -0.2220 PCI/L per year. (6)

All calculations based on log(10) of actual values (7)

(18) Warning: High serial correlation.

(15)

(16) February 14, 1995

(17) Trend Plot Key

Key to Control Charts

Numbers in parentheses ( ) are pointers into this key, not part of the graphics.

(19) Upper learning-period level. Data are not checked against this level. It becomes the upper control limit immediately after the learning period is over.

(20) Lower learning-period level. See comments to (18).

(21) Learning-period mean. See comments to (18).

(22) Upper control limit. This is updated periodically according to an algorithm described in Starks & Flatman, *Evaluation of Control Chart Methodologies for RCRA Waste Sites*. Data are checked against the control limits and flagged as OOC if they fall outside these values.

(23) Lower control limit.

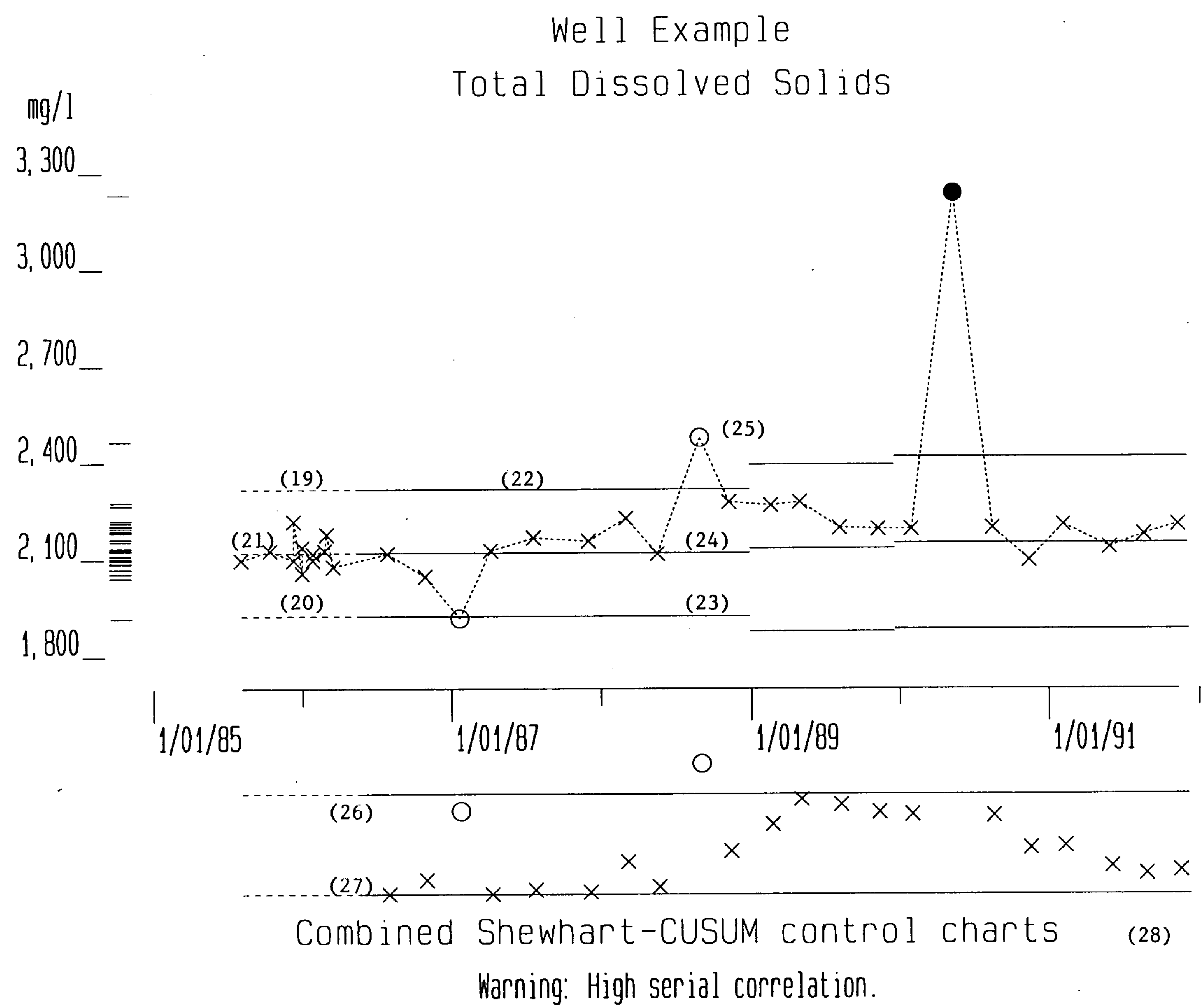
(24) Running mean.

(25) An OOC is recorded as an open circle.

(26) Upper CUSUM limit. This is constant (5). Points falling so high above this limit that they would plot on the upper graphic are plotted as if at a level of 6.5 (units of standard deviation).

(27) The lower CUSUM limit is always 0. Because the two limits are constant, they are not labeled with their values.

(28) Title of the graphic.



 February 14, 1995 Control Chart Key

APPENDIX G

CUMULATIVE SUM (CUSUM) CONTROL CHARTS AND TIME SERIES PLOTS FOR SELECTED GROUNDWATER MONITORING WELLS

APPENDIX G

The techniques used to construct trend plots and Cumulative-Sum (CUSUM) control charts and the interpretation of these graphs is discussed in Appendix F. This appendix presents statistically significant trends and CUSUM control charts for selected analytes from both upgradient and downgradient wells at each of the three RCRA-regulated units. It should be noted that few out-of-control (OOC) records were found at the RCRA-regulated units. However, some control charts are presented to illustrate upgradient and downgradient wells with points determined to represent outliers based on the technique discussed in Appendix F. Time-series plots and control charts are also presented to illustrate potential upgradient contamination.

The interpretation of combined Shewhart and CUSUM control charts is discussed in Appendix F. However, a few key notes for interpreting the control charts are repeated below:

- Three horizontal lines that begin dashed and then change to solid indicate the control limits of the control chart. The top line indicates the *upper control limit*, the center line indicates the running mean of the measurements, and the bottom line indicates the *lower control limit*.

- Unfilled circles mark OOC measurements.

- Filled circles represent outliers. Outliers are shown, but are not used in computations. Outliers are detected using the Hawkins one-outlier test for the normal distribution at the 5% significance level, as given in Mandansky (1988).

- The lower half of the screen shows a CUSUM display. It plots the absolute cumulative difference between the data and a small deviation from the running mean. The CUSUM helps you recognize localized trends.

Trends are identified by a least-squares linear fit to the data. If the slope is significantly different from 0 (as determined by two-tailed Student's t-test with 1% significance) then the fitted line is drawn and control-charting is not attempted.

Solar Evaporation Ponds

Upgradient Wells

For total radionuclides, tritium and americium-241 showed decreasing trends in well P207389. Dissolved metals showed both increasing trends and decreasing trends. In well P207389, strontium and chloride increased, whereas sodium decreased. Well P209389 had increasing trends for calcium, magnesium, sodium, and strontium; however, potassium showed a decreasing trend in well P209389. For inorganic parameters, well P209389 showed increasing trends for bicarbonate, chloride, and total dissolved solids. Chloride exhibited an increasing trend in well P207389. Well P209389 exhibited a decreasing trend for nitrate/nitrite. No analytes illustrated OOC points.

Well P209389 exhibited detectable concentrations of seven VOCs, including, carbon tetrachloride, chloroform, 1,1-dichloroethane, 1,1-dichloroethene, tetrachloroethene, 1,1,1-trichloroethane, and trichloroethene.

Downgradient

For dissolved radionuclides, uranium-238 and uranium-233, -234 showed increasing trends in well P209789. Tritium (total) showed decreasing trends in wells 3086 and 2686. Dissolved metals (barium, calcium, lithium, magnesium, manganese, sodium, and strontium) showed a decreasing trend in well 3086. Five wells exhibited statistically significant trends for inorganic parameters. Well 3086 exhibited decreasing trends for total dissolved solids and nitrate/nitrite and showed increasing trends for fluoride and bicarbonate. Well P209489 exhibited a decreasing trend in well P209489 and an increasing trend for bicarbonate. Well P207889 showed a decreasing trend for bicarbonate. Well P208989 showed a decreasing trend for total suspended solids.

The control chart for well 2686 is presented to illustrate the outlier sample for fourth quarter, 1993. Concentrations of various constituents in downgradient well 2686 were estimated to be significantly greater than upgradient mean concentrations. However, there was not a significant trend at well 2686, and the outlier point appears to be anomalous as noted by the next two sampling periods, which return to the running mean.

Evidence of downgradient VOCs was found in wells P209489 (carbon tetrachloride, chloroform, tetrachloroethene, and trichloroethene), P209789 (tetrachloroethene), 05193 (tetrachloroethene and trichloroethene), and 2686 (trichloroethene).

West Spray Field

Upgradient Wells

Manganese exhibited a decreasing trend in well 46192. No trends or OOC points were identified for radionuclides or inorganic parameters. Well 46192 and a blank which were both sampled during the second quarter, 1994 showed a detection for methylene chloride.

Downgradient Wells

Downgradient wells at the West Spray Fields exhibited both deceasing trends and OOC points for dissolved radionuclides and inorganic parameters. Dissolved metals only exhibited decreasing trends. Well 5086 showed a decreasing trend for gross beta and OOC points for uranium-233,-234 and uranium-238. Uranium-233,-234 both exhibited elevated activities (relative to the running mean) from fourth quarter, 1993 through second quarter, 1994. The mean activities of these radionuclides in compliance wells, however, were not statistically greater than mean background activities. Well B410789 showed a decreasing trend for cesium-137. Well B110889 exhibited a decreasing trend for gross beta; a potentially anomalous point is also delineated on this trend plot. Well B410589 exhibited a decreasing trend for both barium and manganese. Well B410789 exhibited a decreasing trend for barium and an increasing trend for sodium. For inorganic analytes, B410589 exhibited a deceasing trend for nitrate/nitrite. Well B410689 exhibited an increasing trend for chloride and a potentially anomalous point. Well B410789 showed an OOC point for total dissolved solids. An outlier point was also delineated for first quarter, 1991. Subsequent sampling periods after the OOC point are within control limits.

Present Landfill

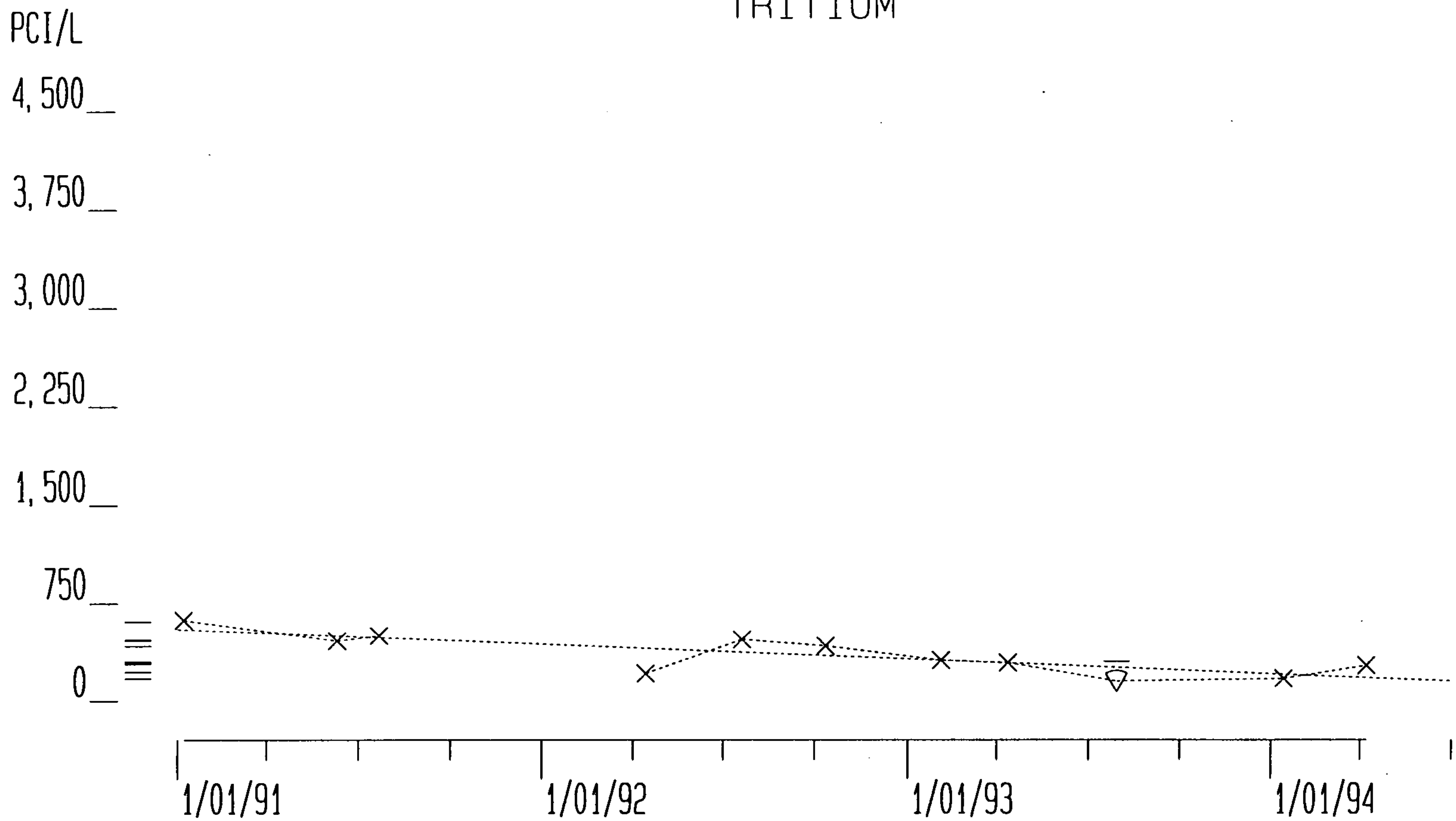
Upgradient Wells

Dissolved strontium-89,90 and total tritium exhibited decreasing trends in well 1086. For dissolved metals, potassium exhibited a decreasing trend in well 5887. Wells 70393 showed an increasing trend for barium and a decreasing trend for manganese. Wells 70493 and 70693 also exhibited a decreasing trend for manganese.

Downgradient Wells

Well B207089 exhibited decreasing trends for the following analytes: uranium-233,-234, barium, manganese, nitrate/nitrite, and chloride. The control chart for sulfate in well B207089 is provided to illustrate the probable anomalous point during third quarter, 1991.

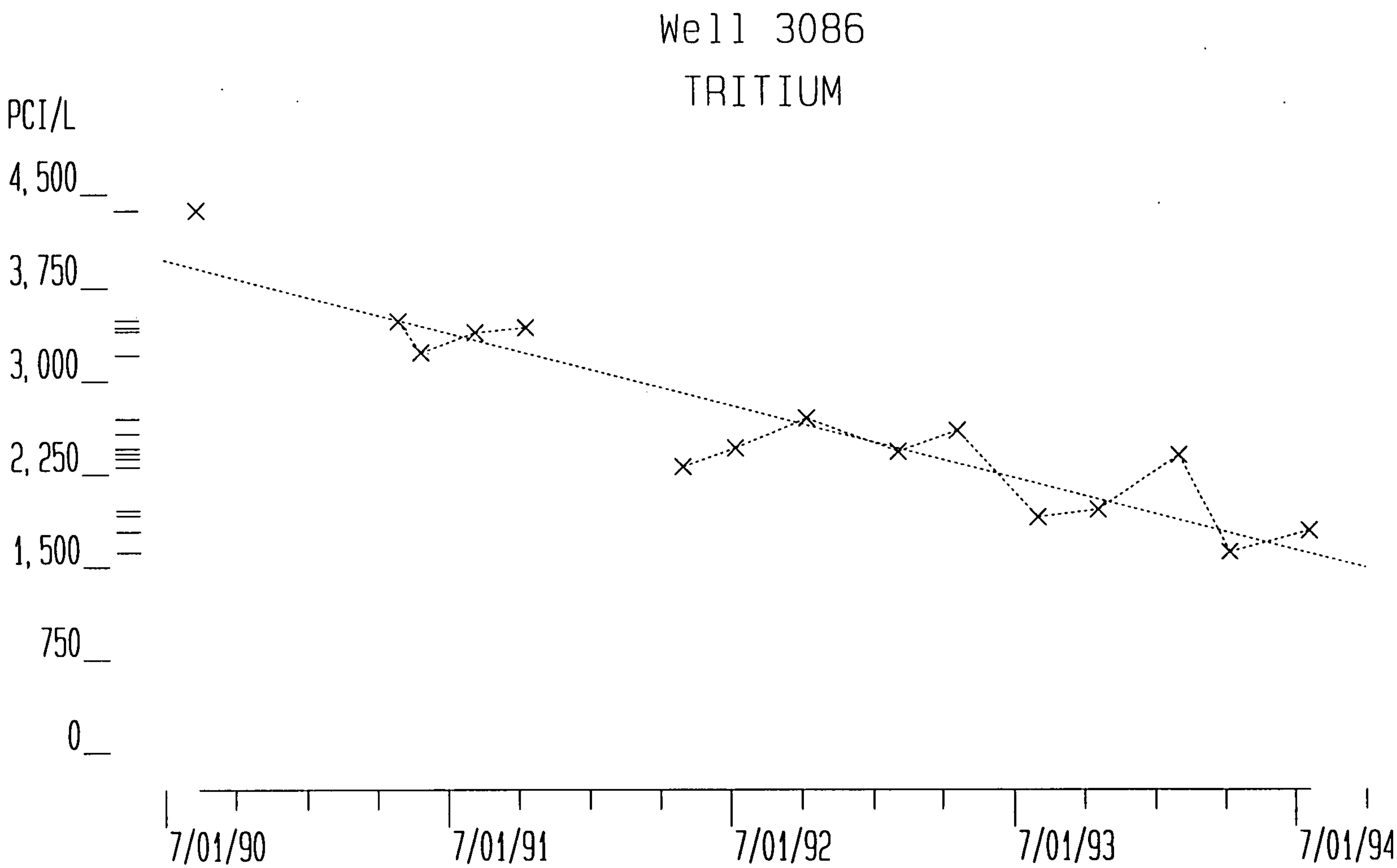
Well 2686
TRITIUM



Slope of regression line is -114.1678 PCI/L per year.

January 19, 1995

Solar Evaporation Ponds



Slope of regression line is -584.3594 PCI/L per year.

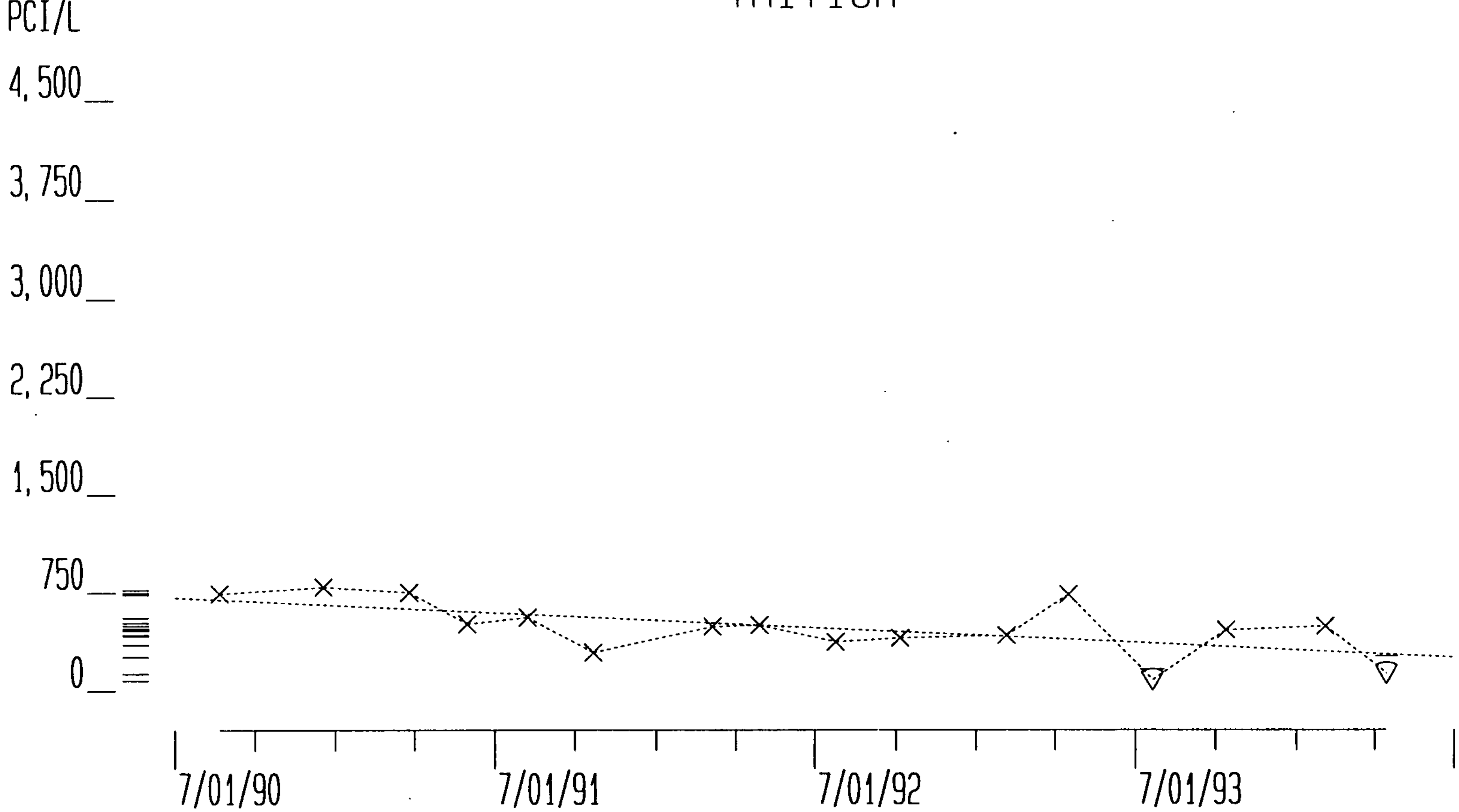
Warning: High serial correlation.

January 19, 1995

Solar Evaporation Ponds

Well P207389

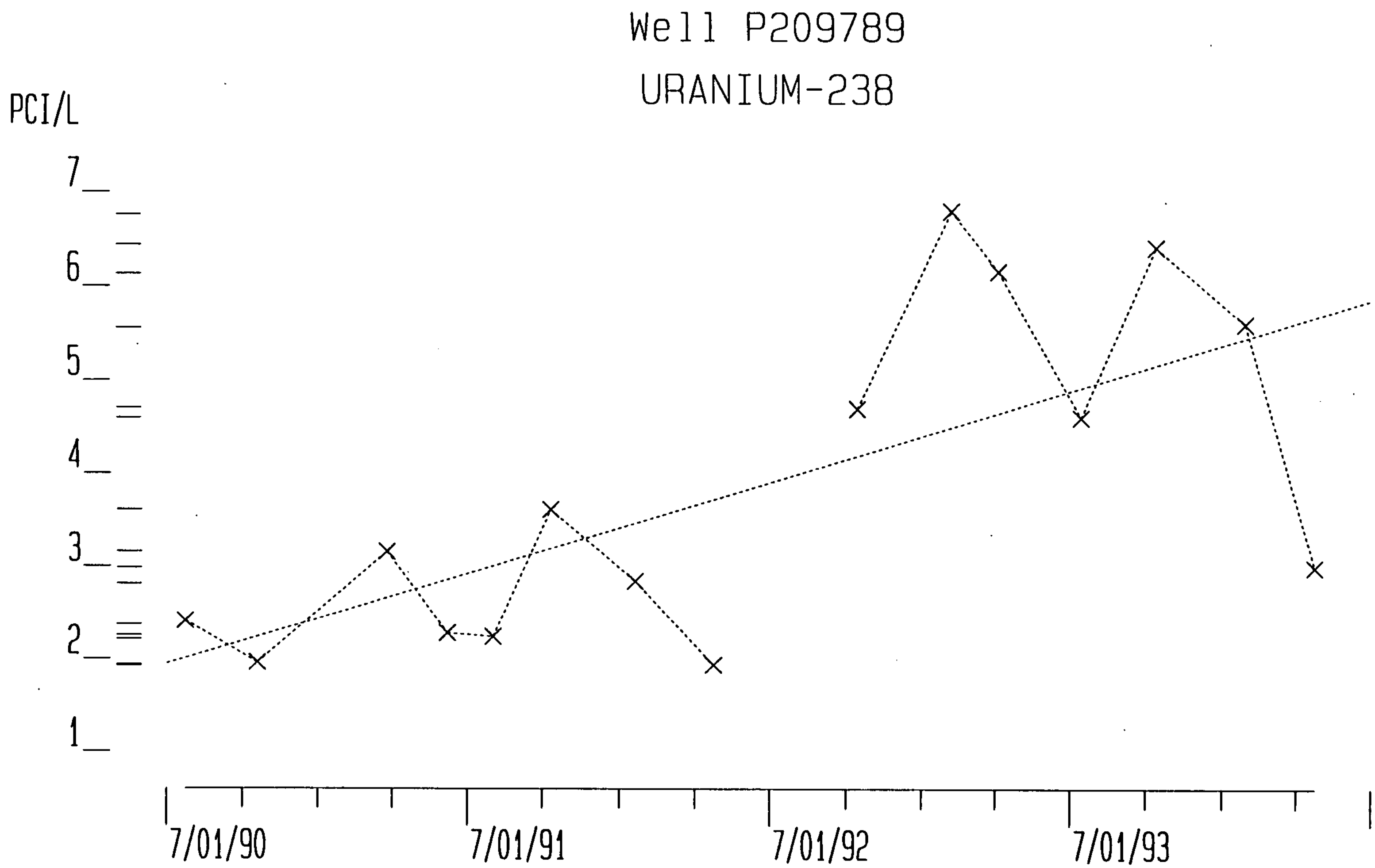
TRITIUM



Slope of regression line is -114.1724 PCI/L per year.

January 19, 1995

Solar Evaporation Ponds



Slope of regression line is 0.9777 PCI/L per year.

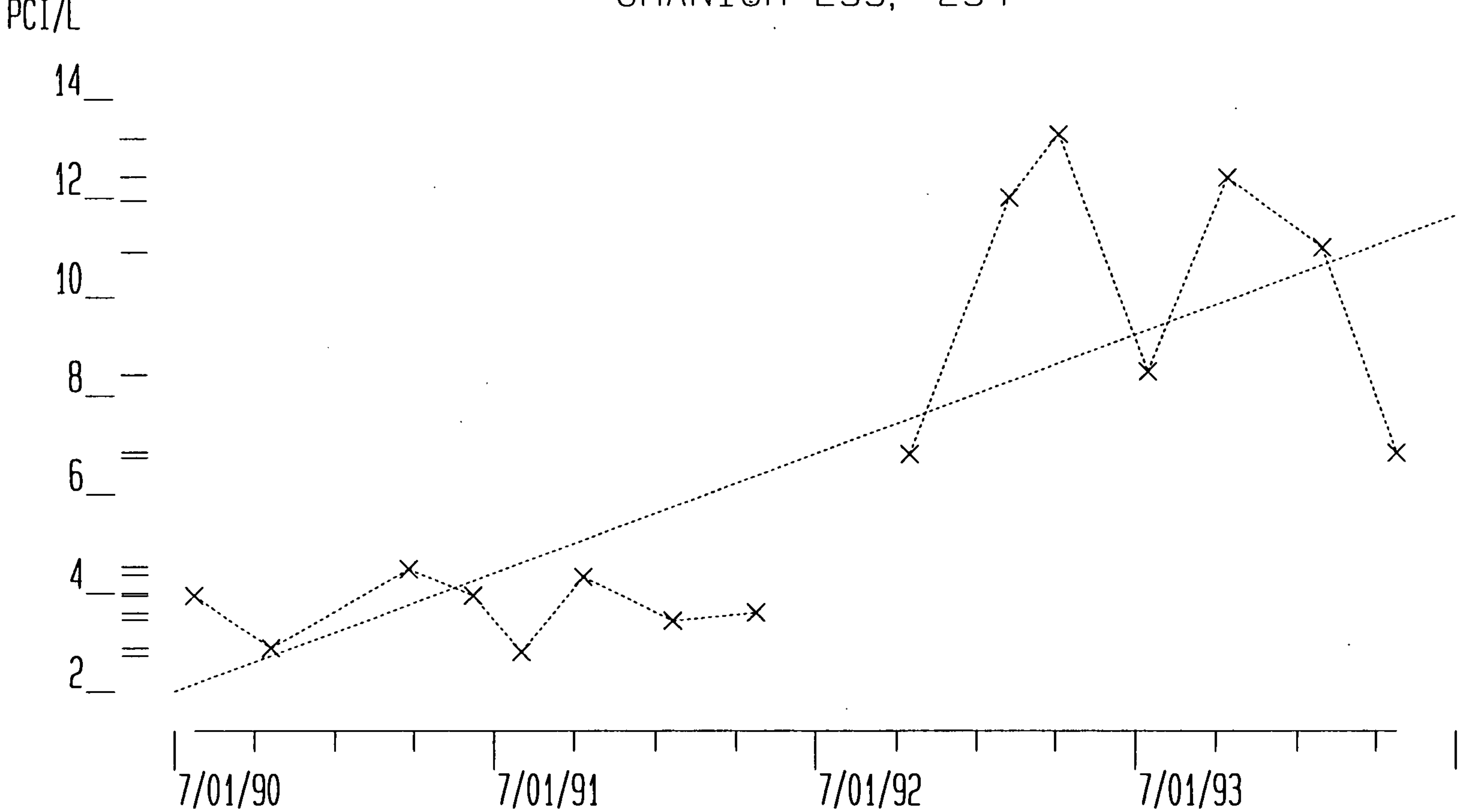
Warning: High serial correlation.

January 19, 1995

Solar Evaporation Ponds

Well P209789

URANIUM-233, -234



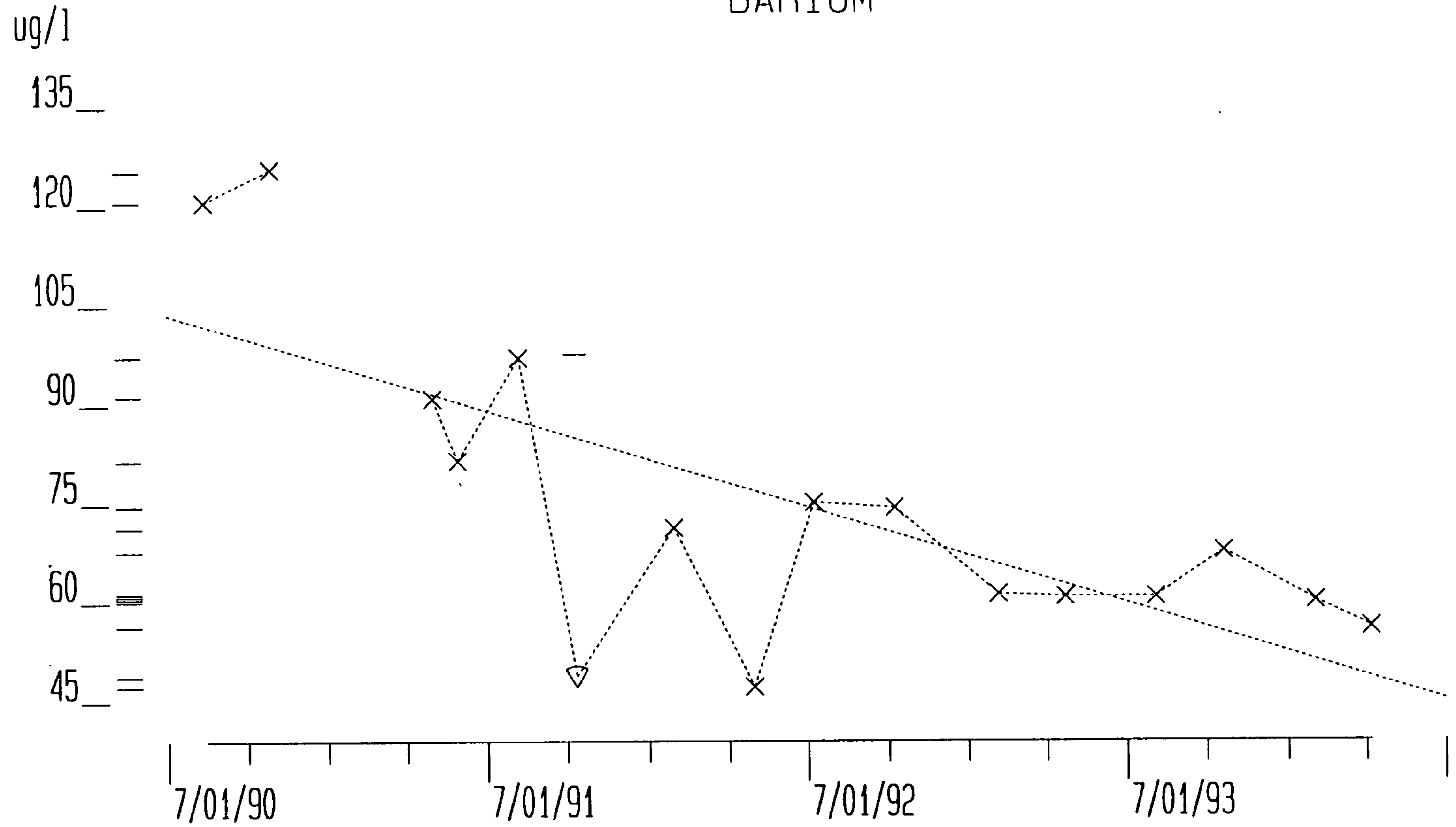
Slope of regression line is 2.4041 PCI/L per year.

Warning: High serial correlation.

January 19, 1995

Solar Evaporation Ponds

Well 3086
BARIUM



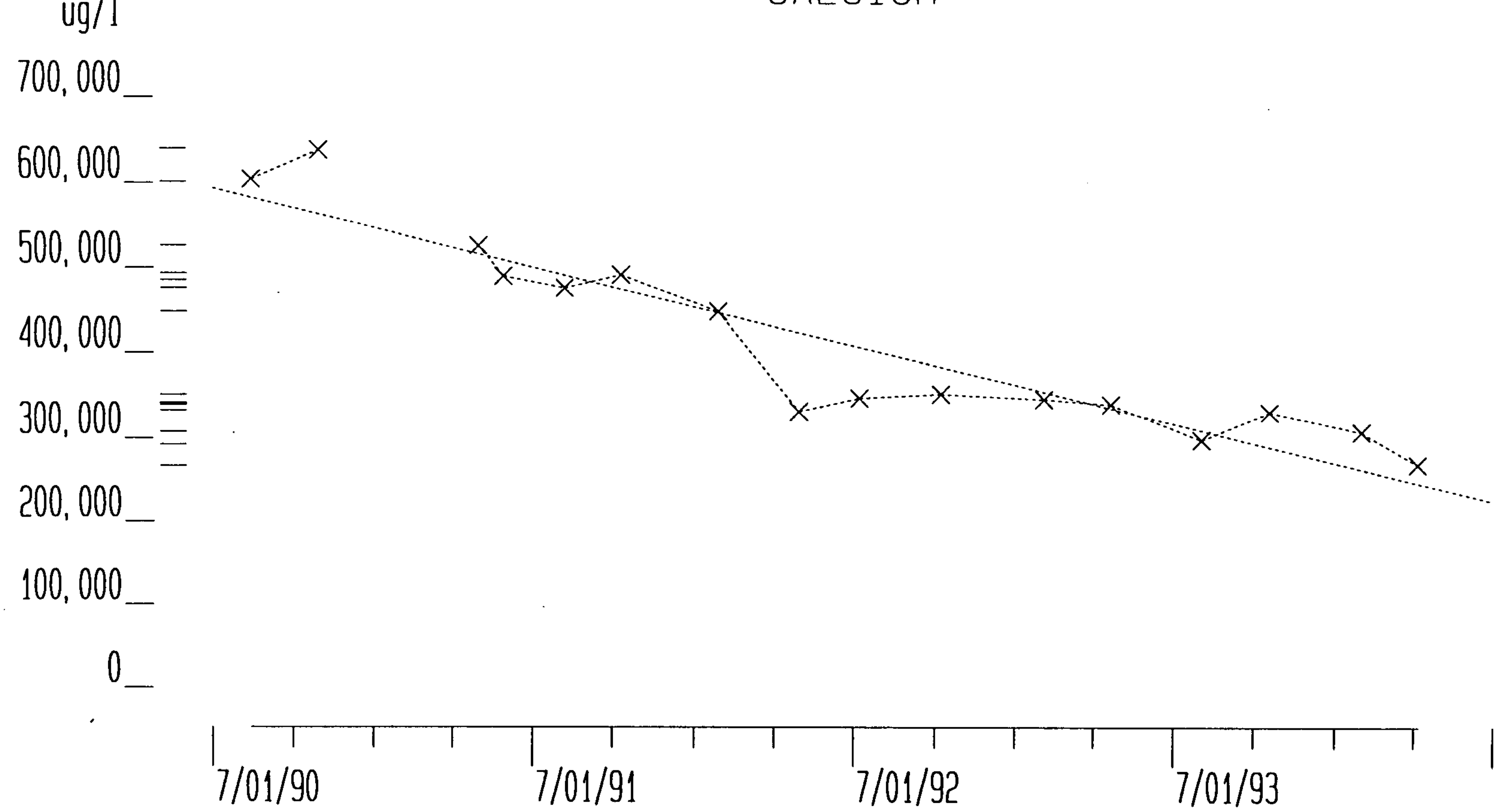
Slope of regression line is -14.6517 ug/l per year.

Warning: High serial correlation.

January 19, 1995

Solar Evaporation Ponds

Well 3086
CALCIUM



Slope of regression line is -92582.1749 ug/l per year.

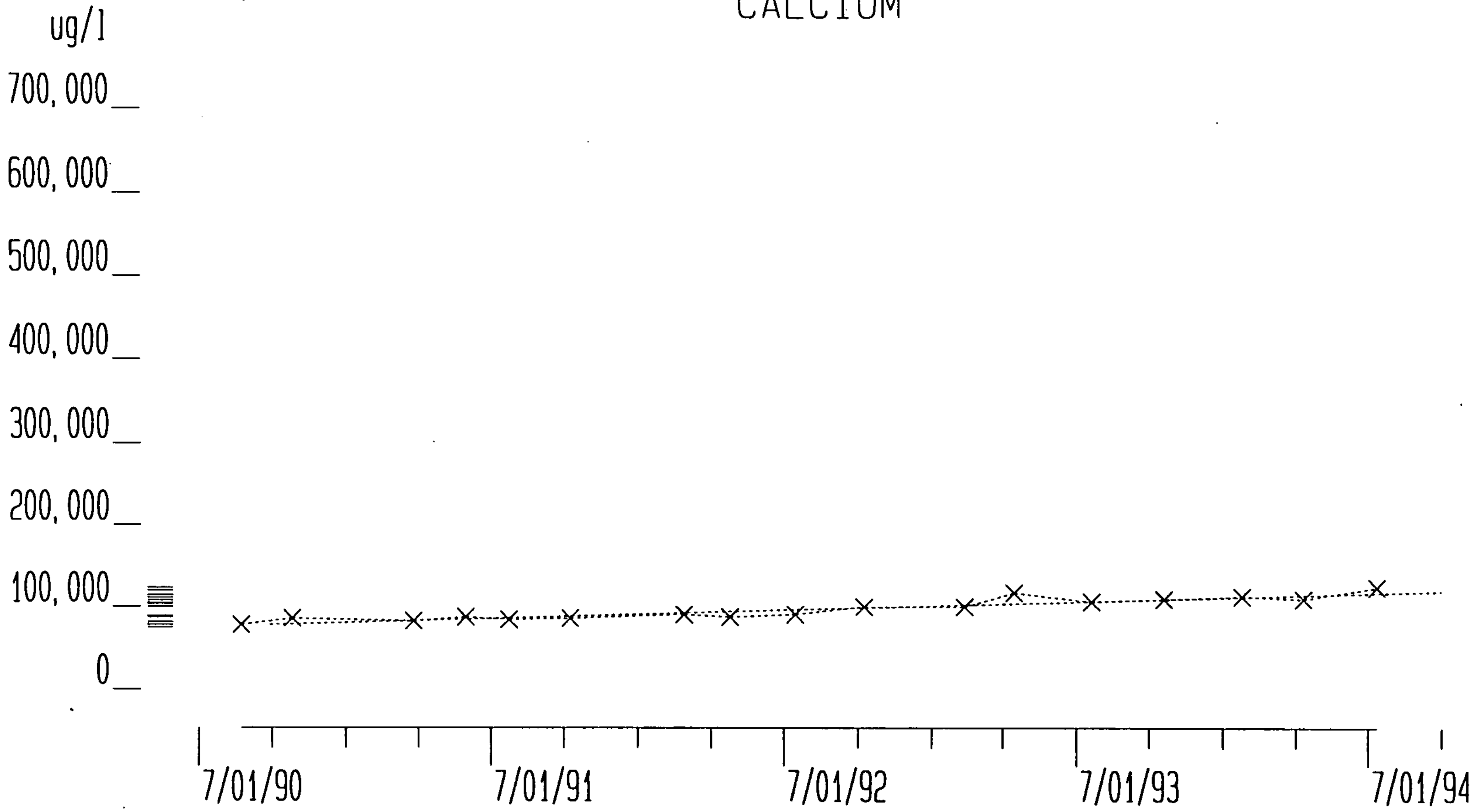
Warning: High serial correlation.

January 19, 1995

Solar Evaporation Ponds

Well P209389

CALCIUM



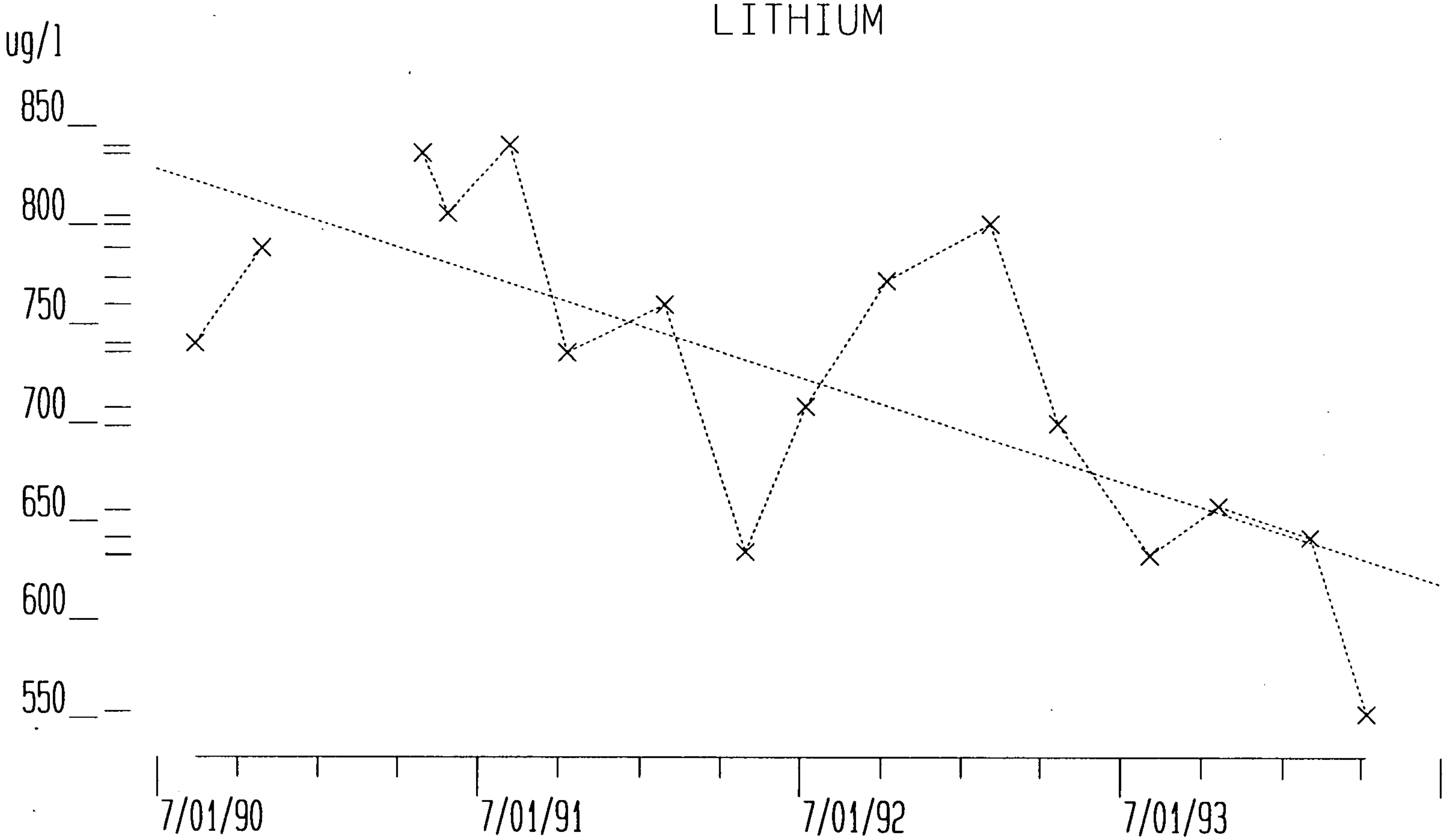
Slope of regression line is 10261.0909 ug/l per year.

Warning: High serial correlation.

January 19, 1995

Solar Evaporation Ponds

Well 3086
LITHIUM

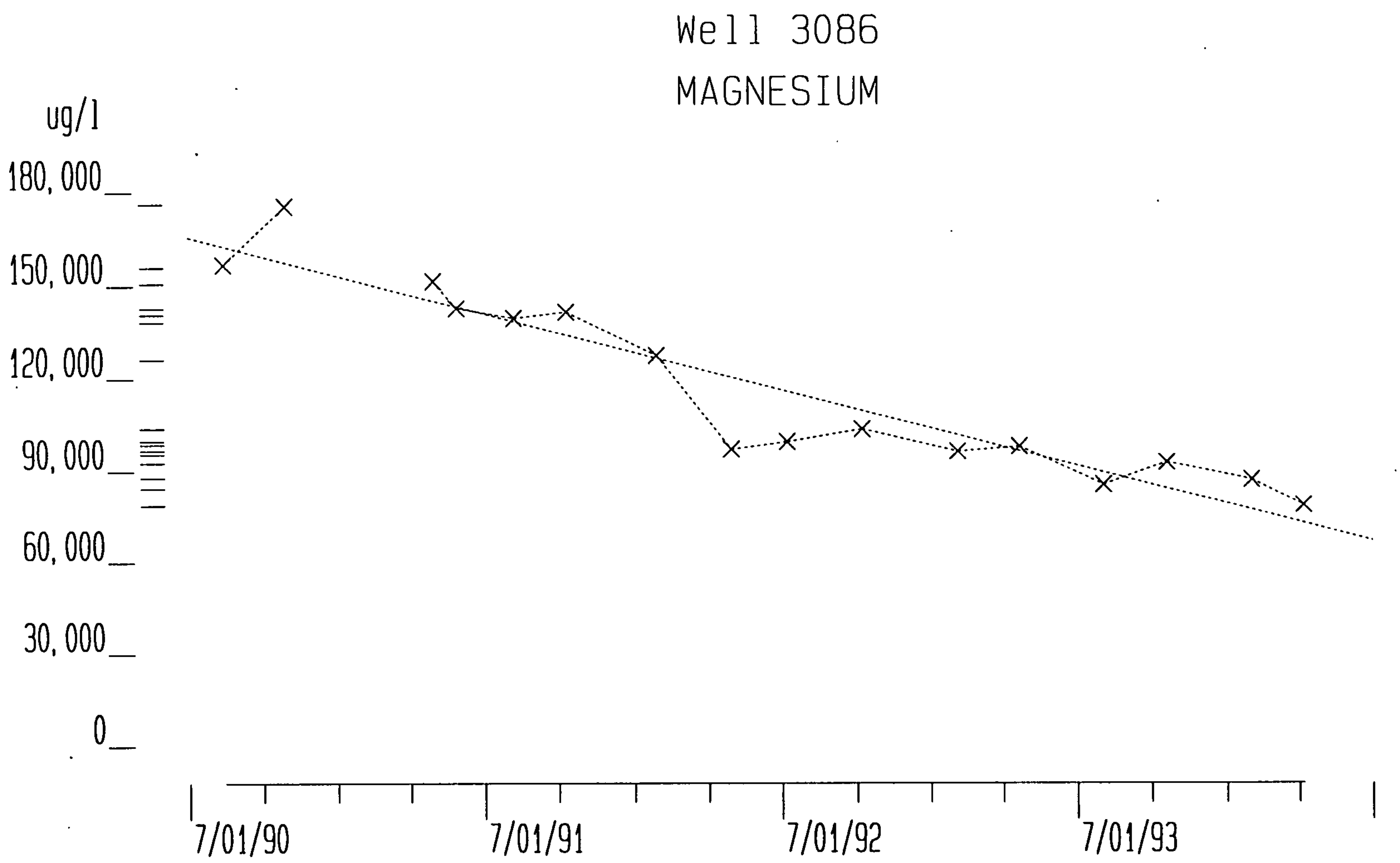


Slope of regression line is -52.7024 ug/l per year.

Warning: High serial correlation.

January 19, 1995

Solar Evaporation Ponds



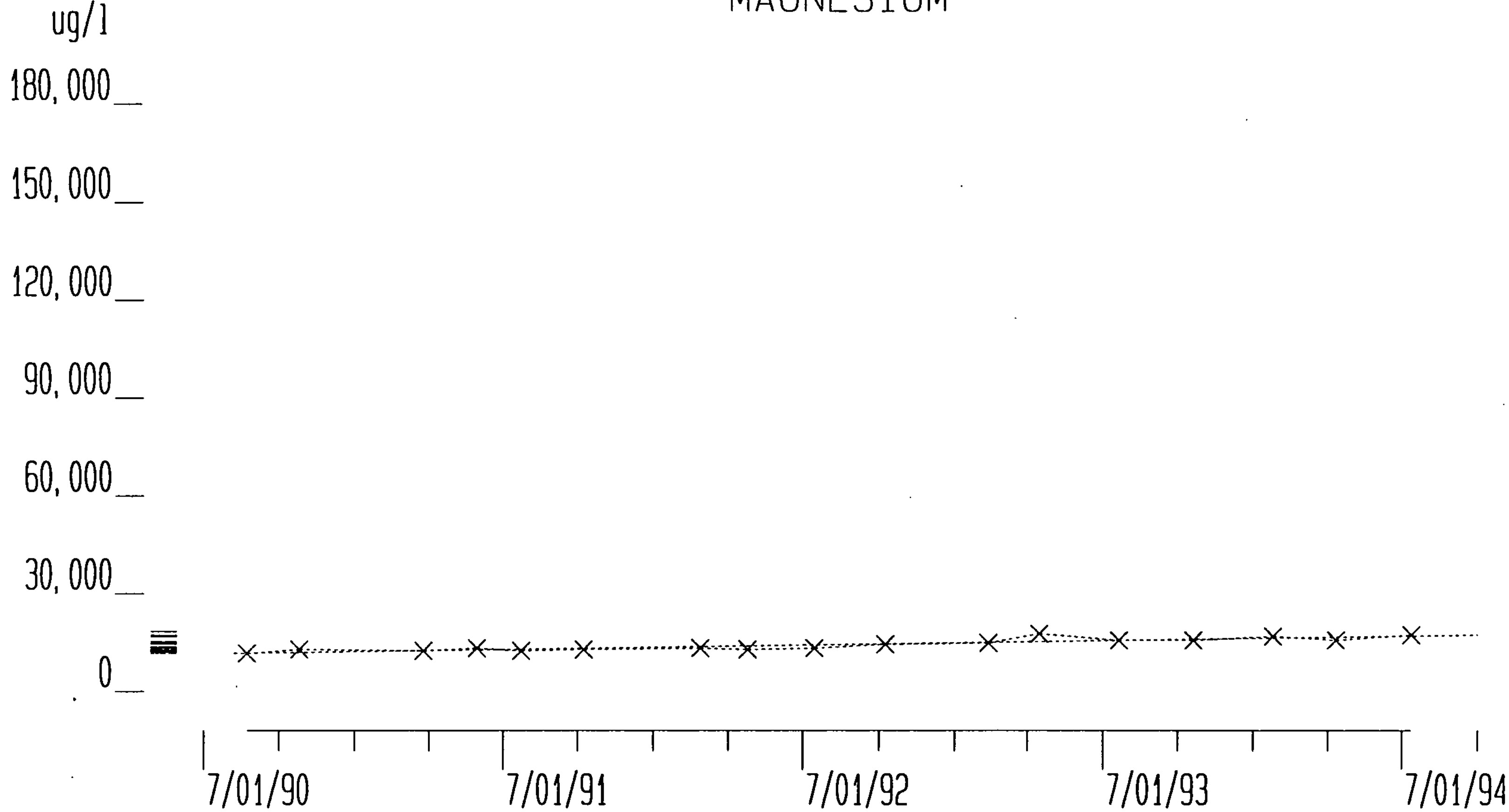
Slope of regression line is -24621.3184 ug/l per year.

Warning: High serial correlation.

January 19, 1995

Solar Evaporation Ponds

Well P209389
MAGNESIUM

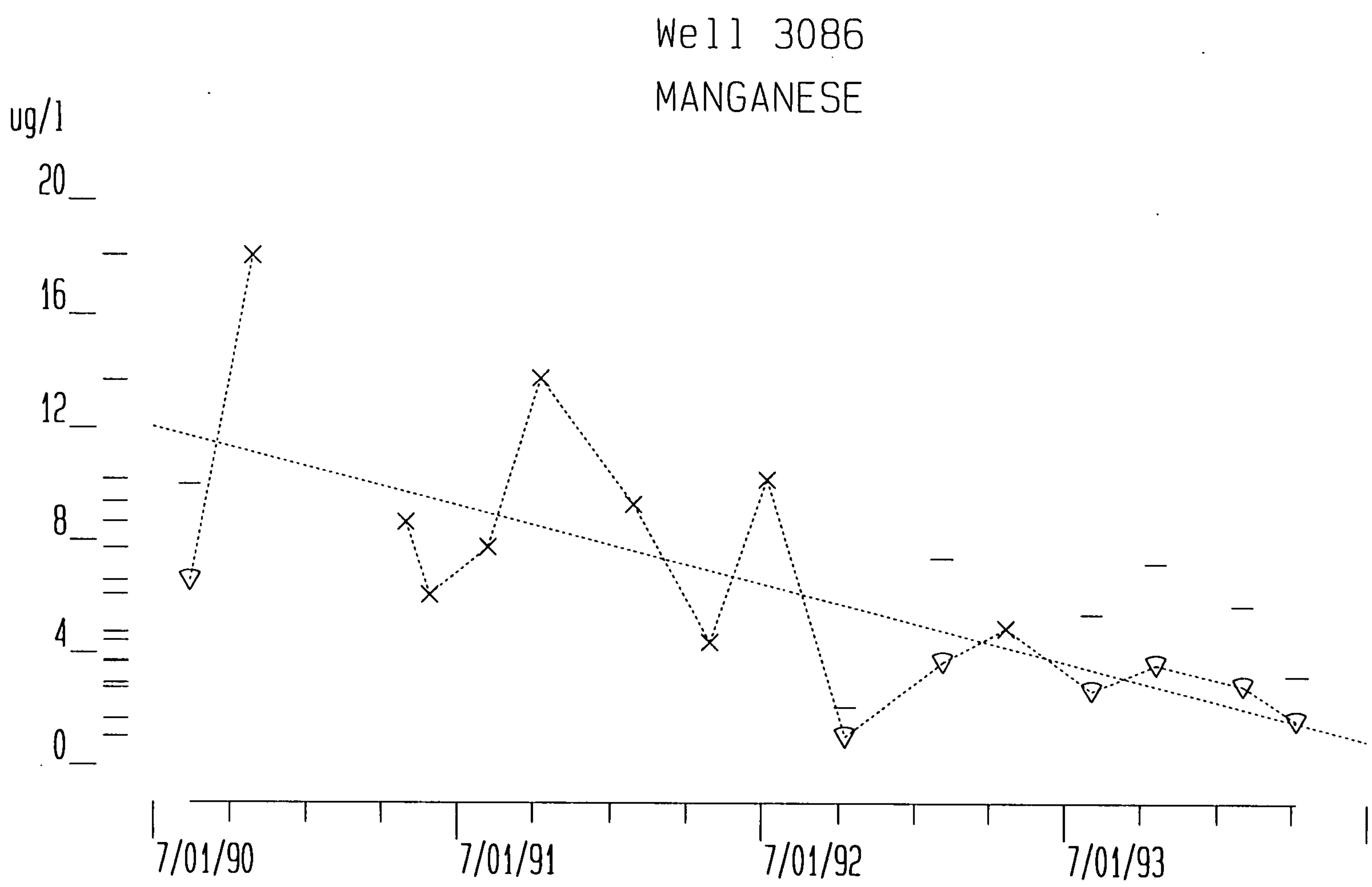


Slope of regression line is 1353.8406 ug/l per year.

Warning: High serial correlation.

January 19, 1995

Solar Evaporation Ponds



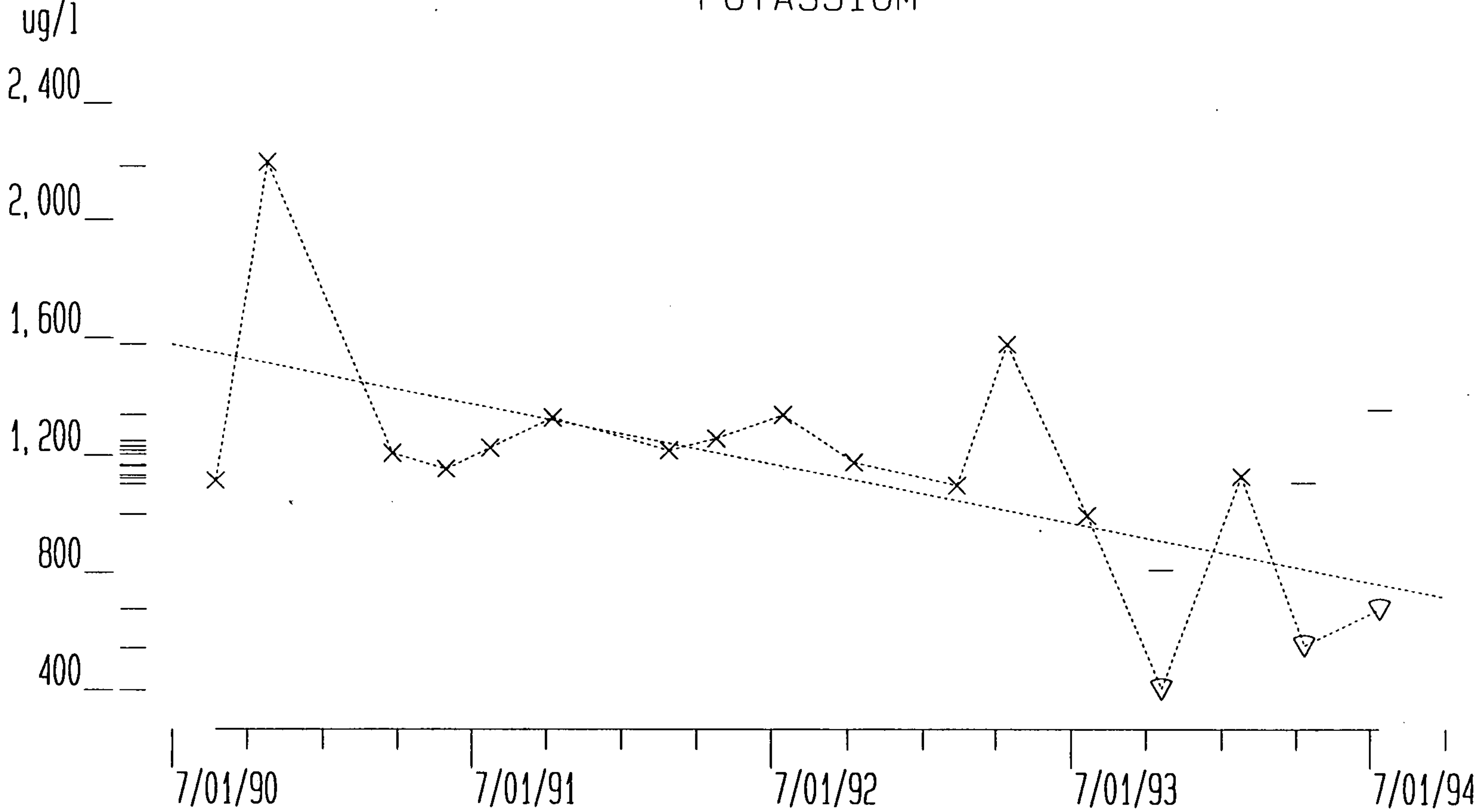
Slope of regression line is -2.7797 ug/l per year.

January 19, 1995

Solar Evaporation Ponds

Well P209389

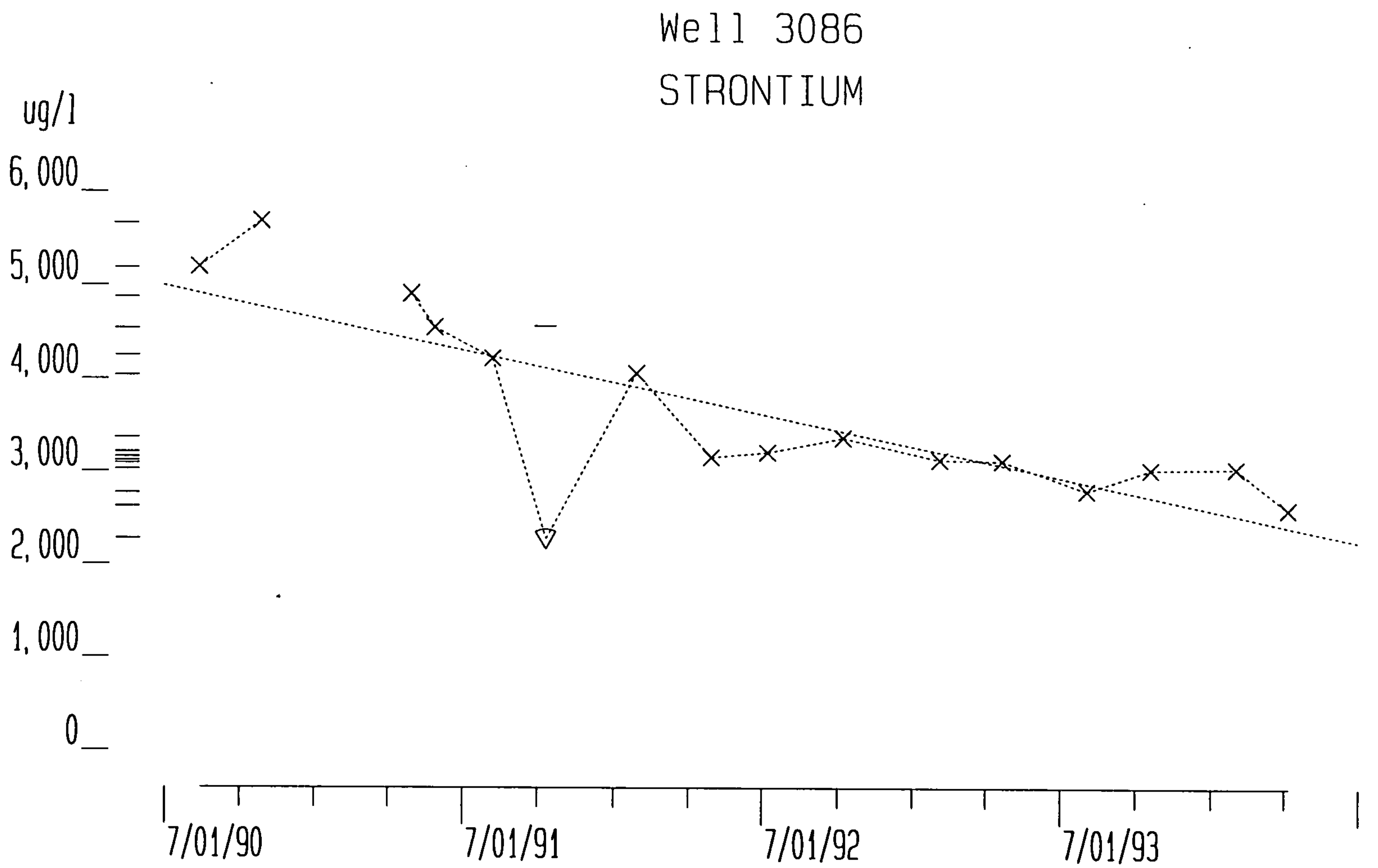
POTASSIUM



Slope of regression line is -203.2338 ug/l per year.

January 19, 1995

Solar Evaporation Ponds



Slope of regression line is -688.3881 ug/l per year.

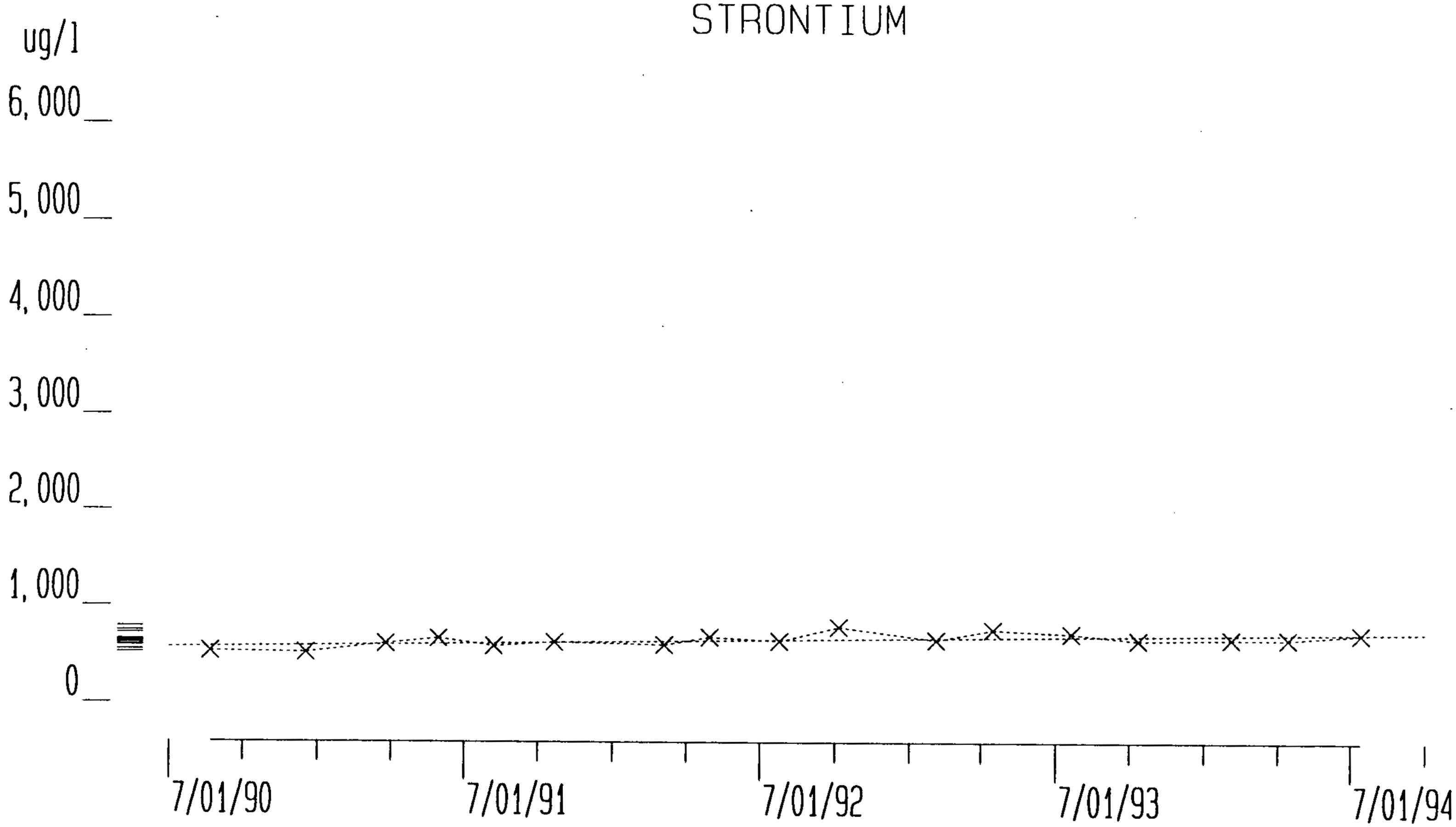
Warning: High serial correlation.

January 19, 1995

Solar Evaporation Ponds

Well P207389

STRONTIUM



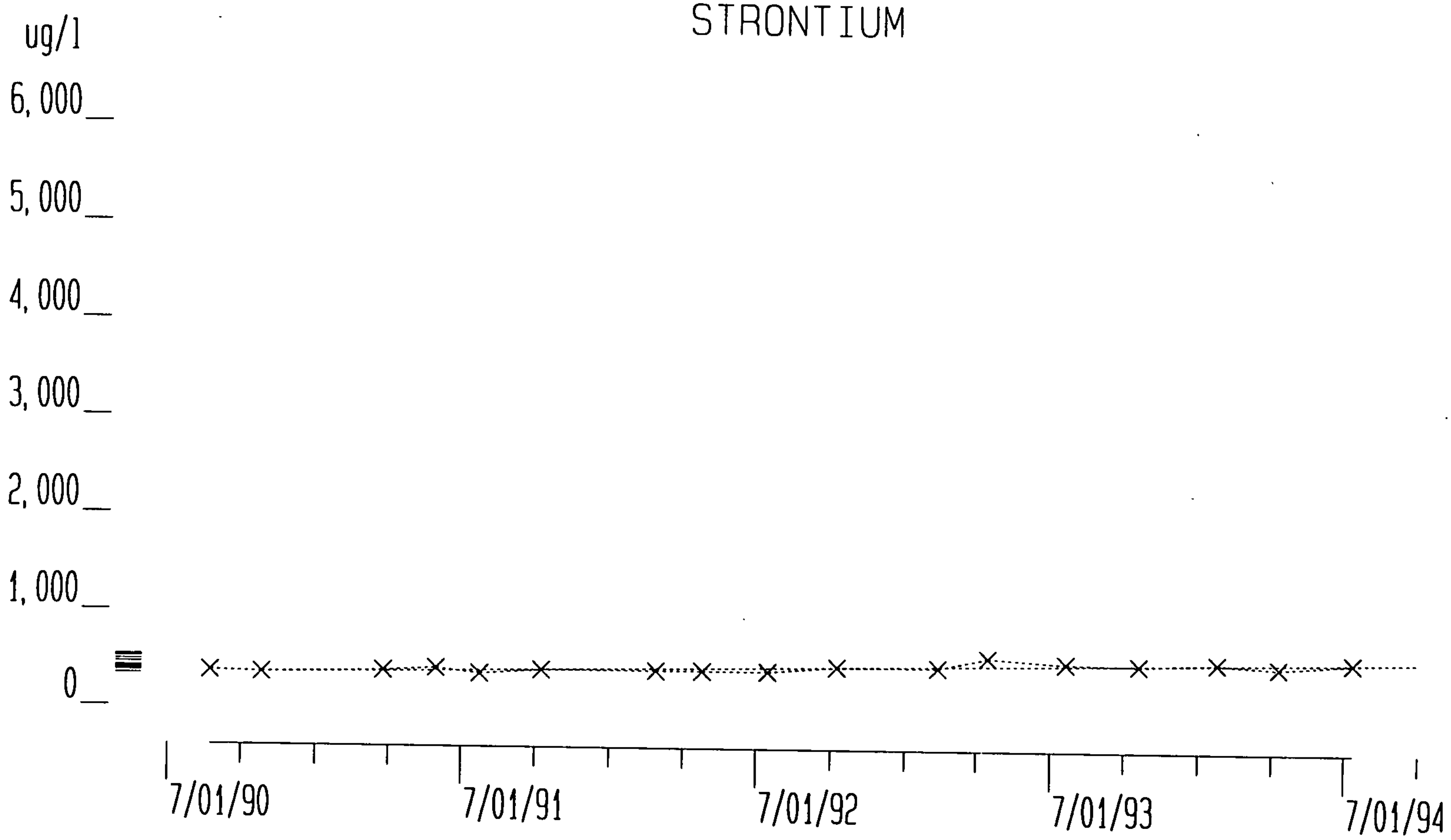
Slope of regression line is 40.1230 ug/l per year.

January 19, 1995

Solar Evaporation Ponds

Well P209389

STRONTIUM



Slope of regression line is 46.3573 ug/l per year.

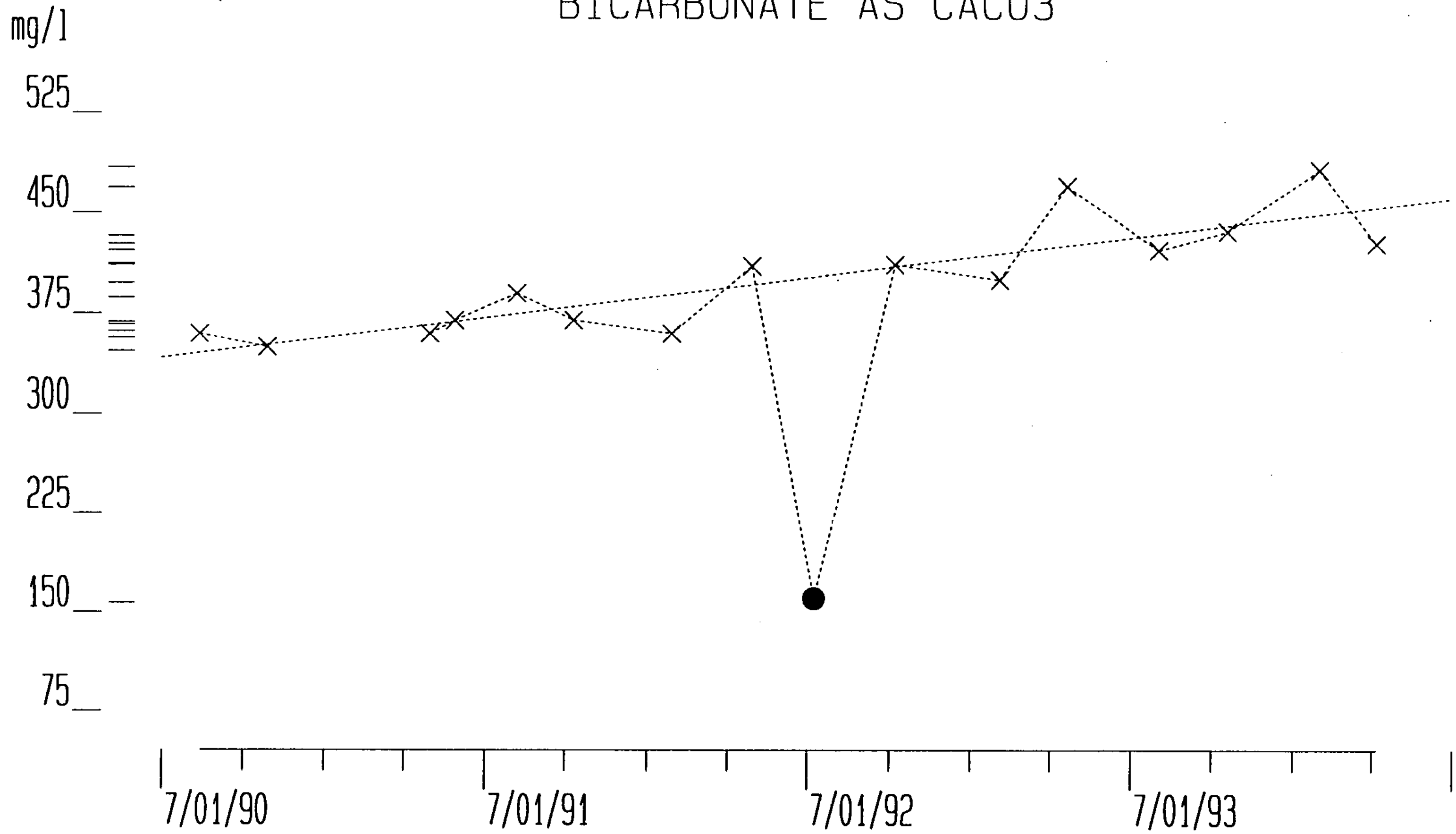
Warning: High serial correlation.

January 19, 1995

Solar Evaporation Ponds

Well 3086

BICARBONATE AS CACO3



Slope of regression line is 29.7473 mg/l per year.

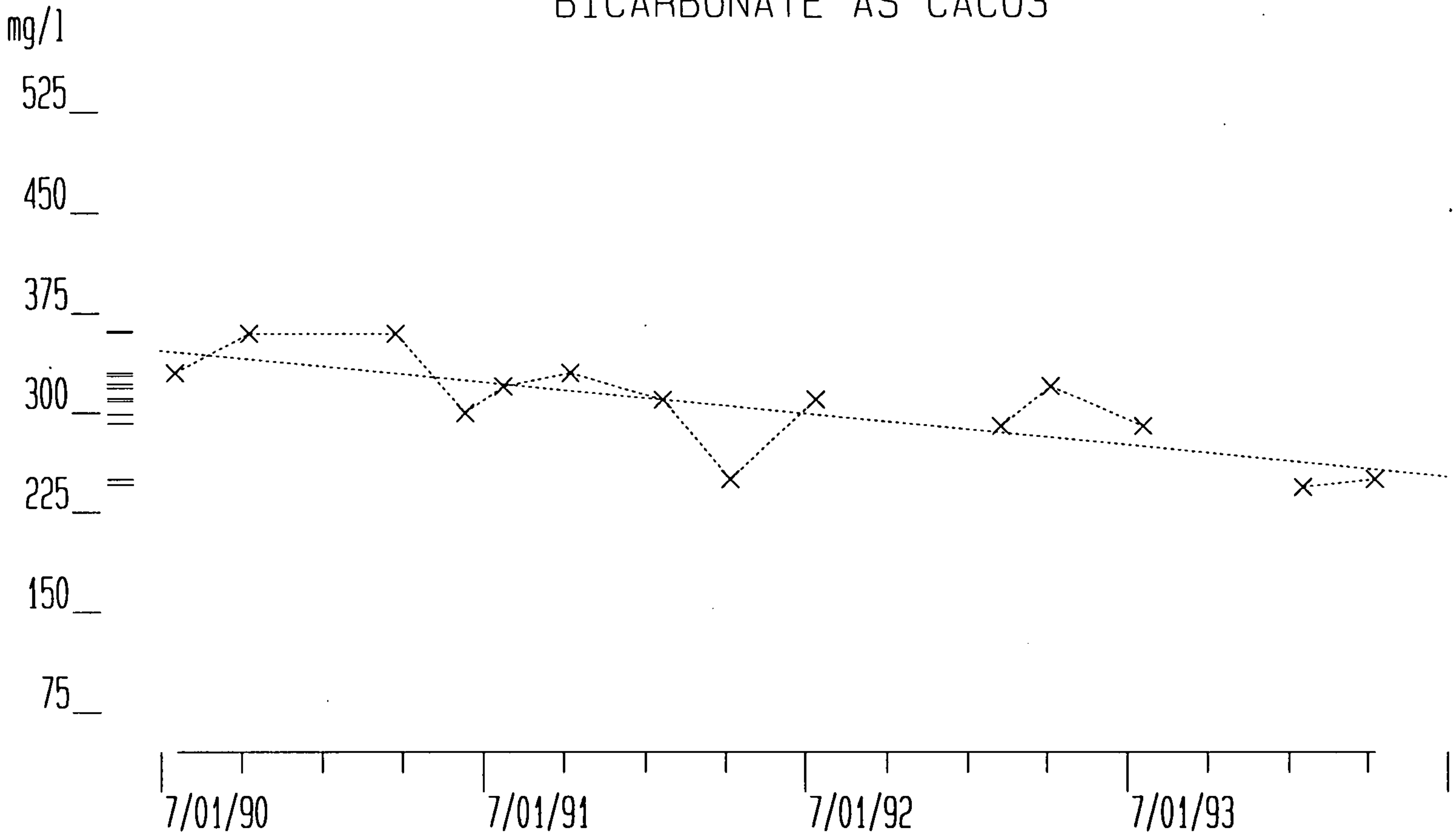
Warning: High serial correlation.

January 19, 1995

Solar Evaporation Ponds

Well P207889

BICARBONATE AS CACO3



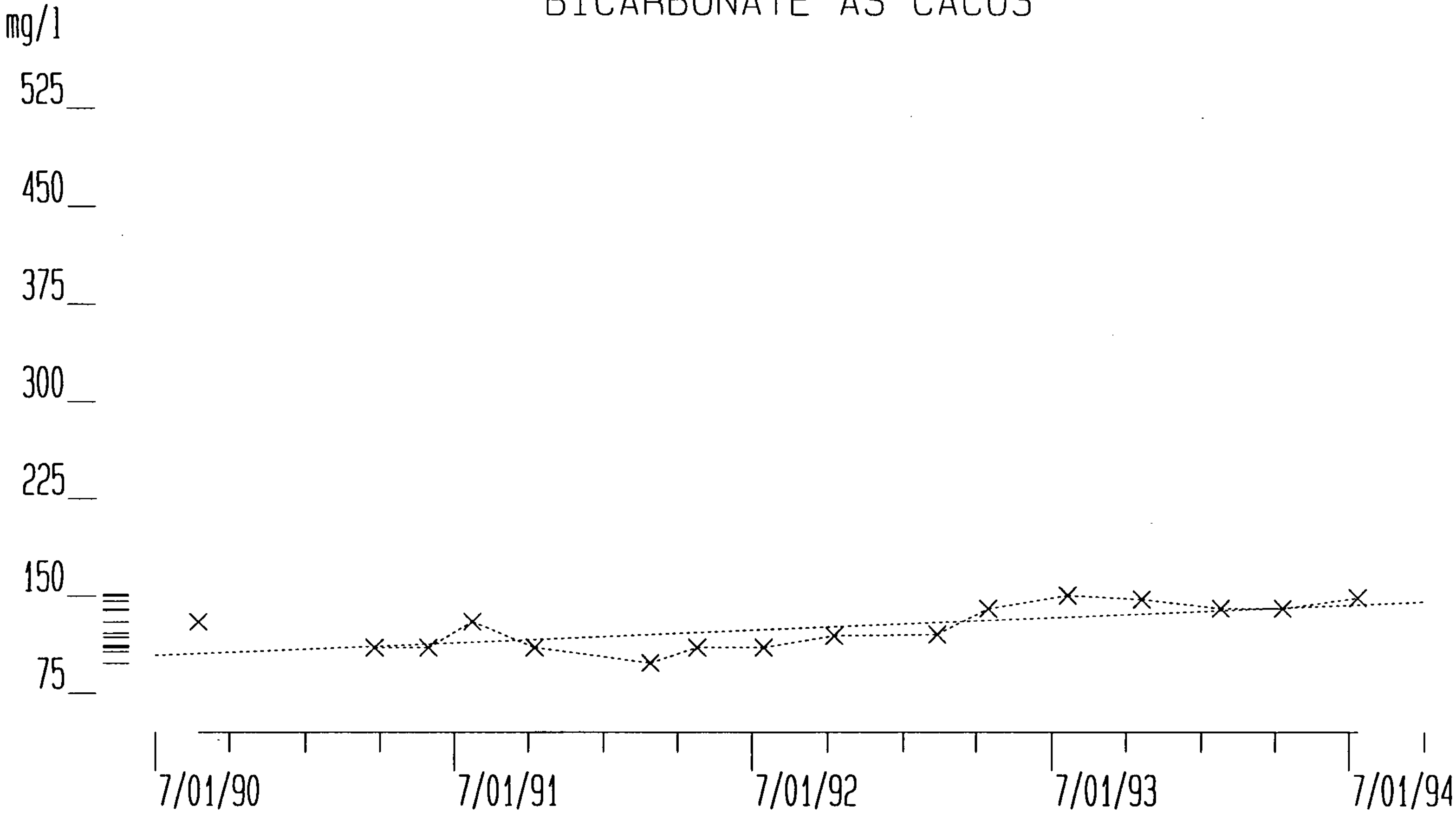
Slope of regression line is -23.7826 mg/l per year.

January 19, 1995

Solar Evaporation Ponds

Well P209389

BICARBONATE AS CACO3

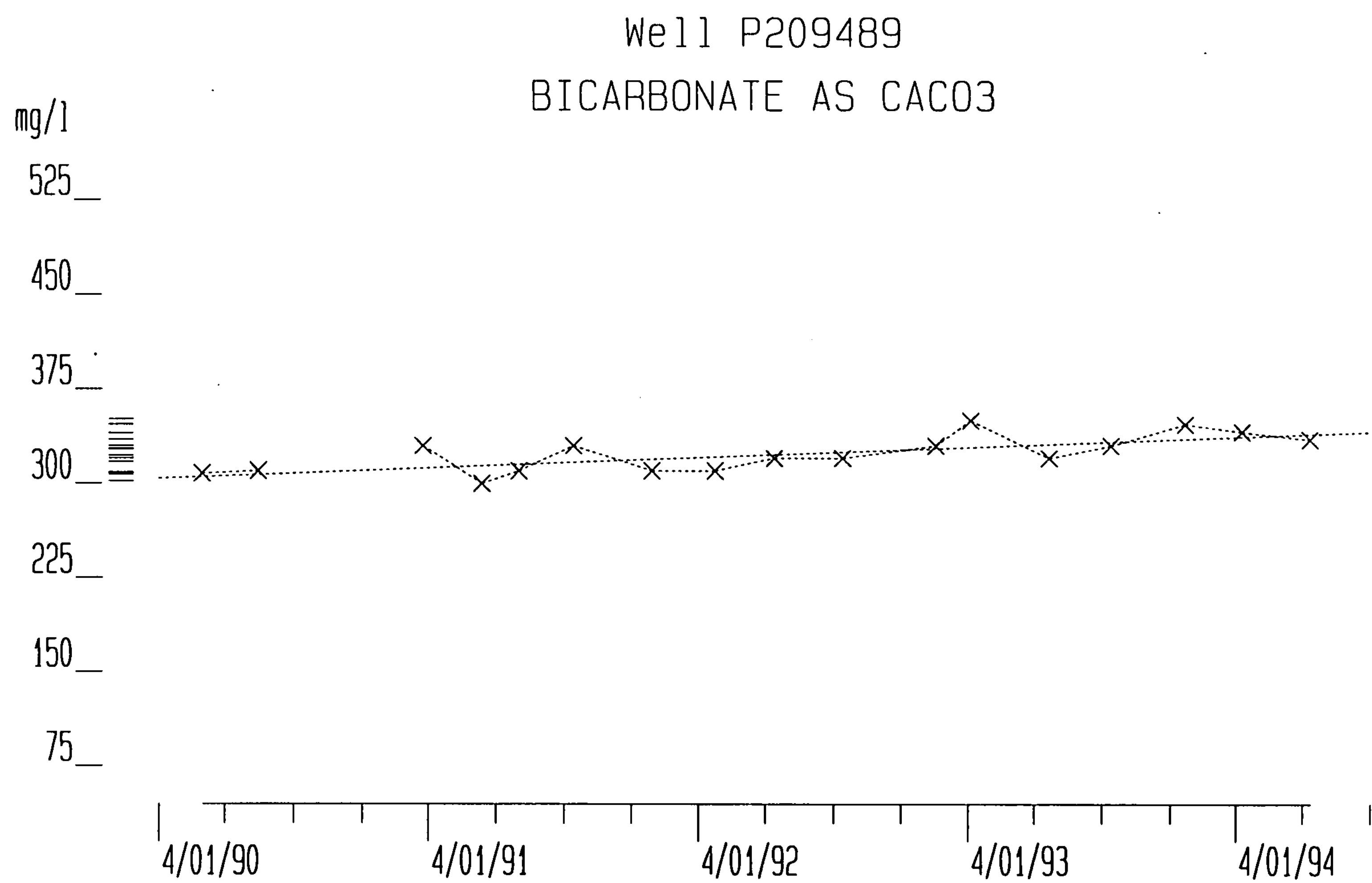


Slope of regression line is 9.7015 mg/l per year.

Warning: High serial correlation.

January 19, 1995

Solar Evaporation Ponds

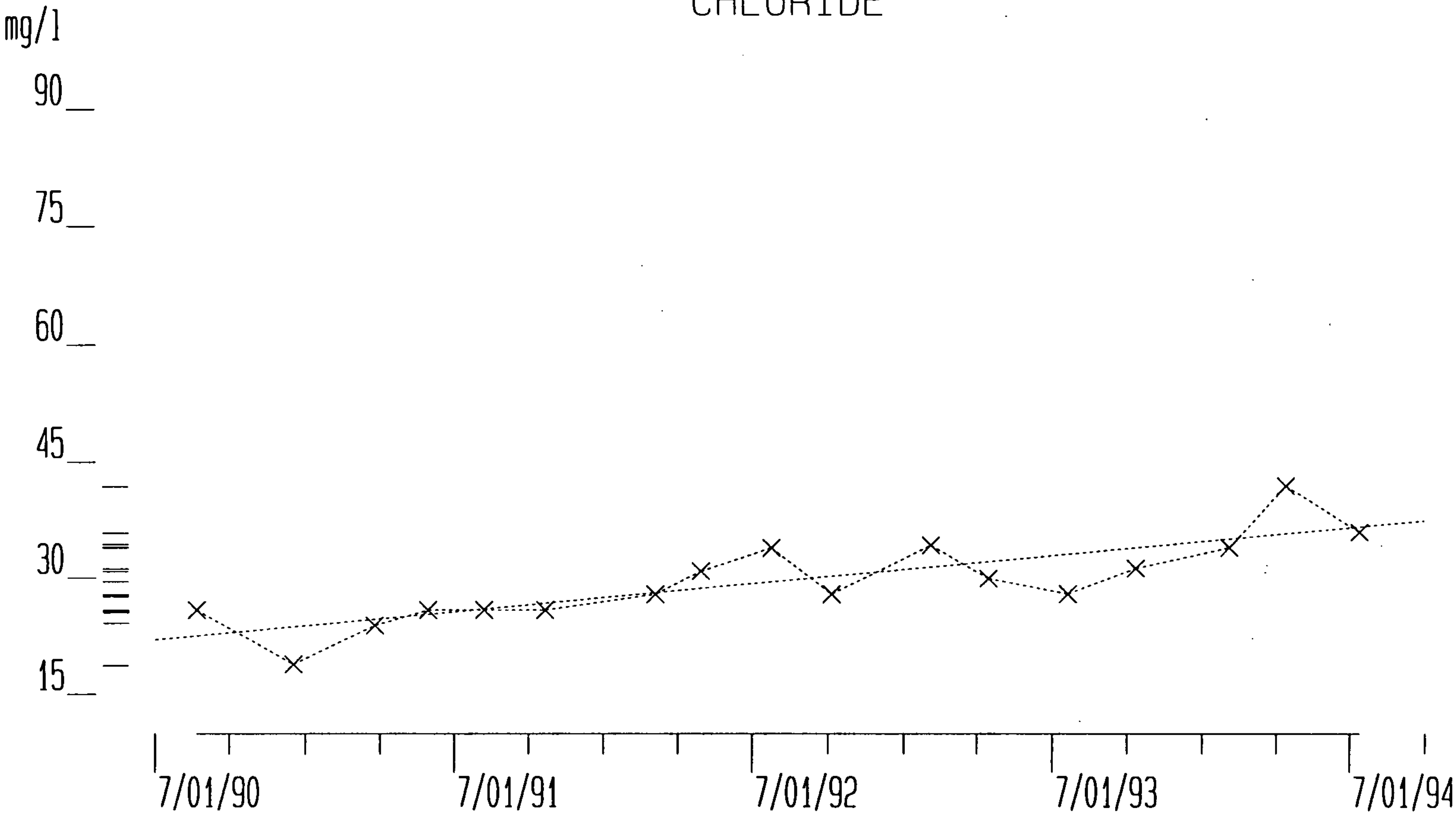


Slope of regression line is 8.2532 mg/l per year.

January 19, 1995

Solar Evaporation Ponds

Well P207389
CHLORIDE



Slope of regression line is 3.6289 mg/l per year.

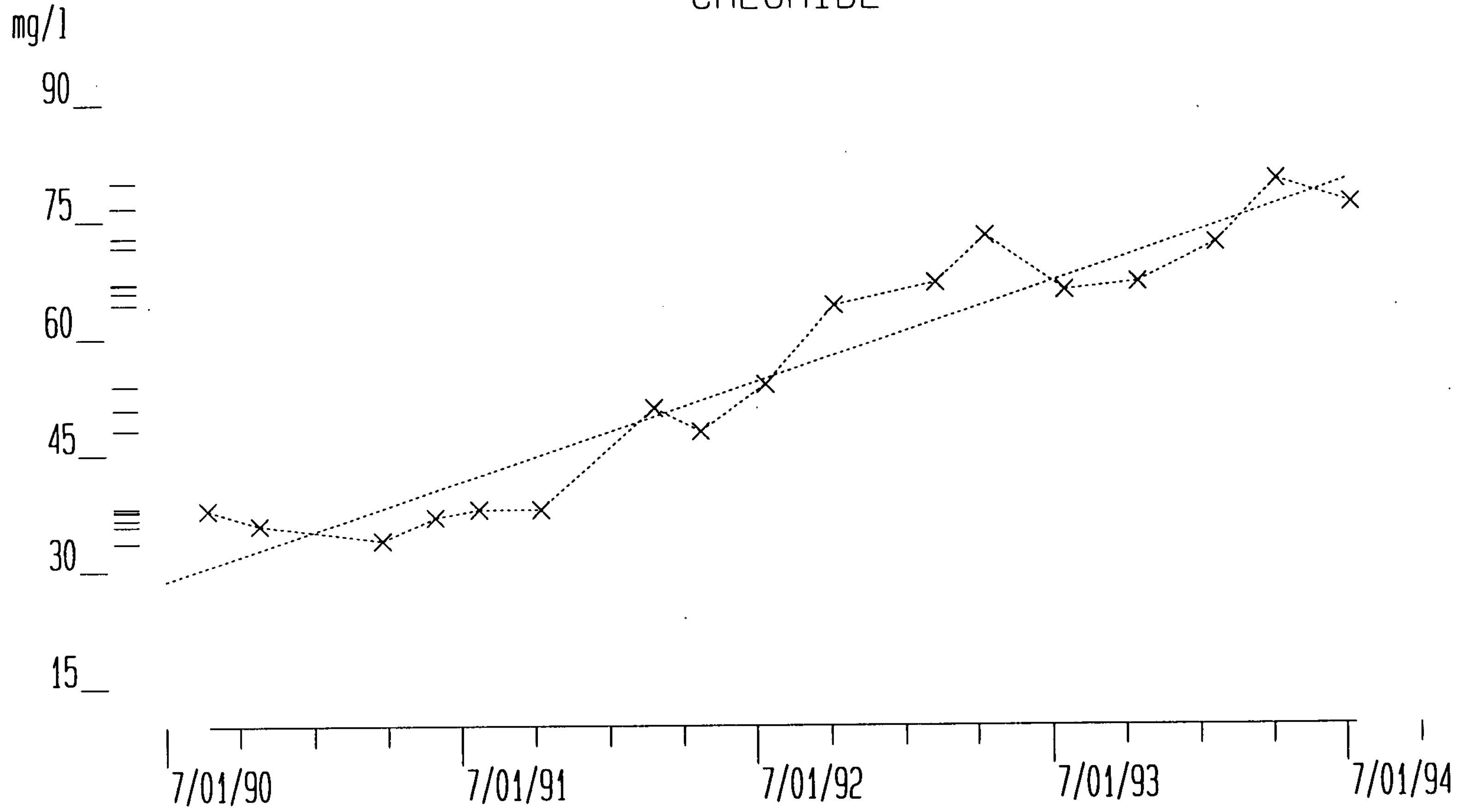
Warning: High serial correlation.

January 19, 1995

Solar Evaporation Ponds

Well P209389

CHLORIDE



Slope of regression line is 12.7309 mg/l per year.

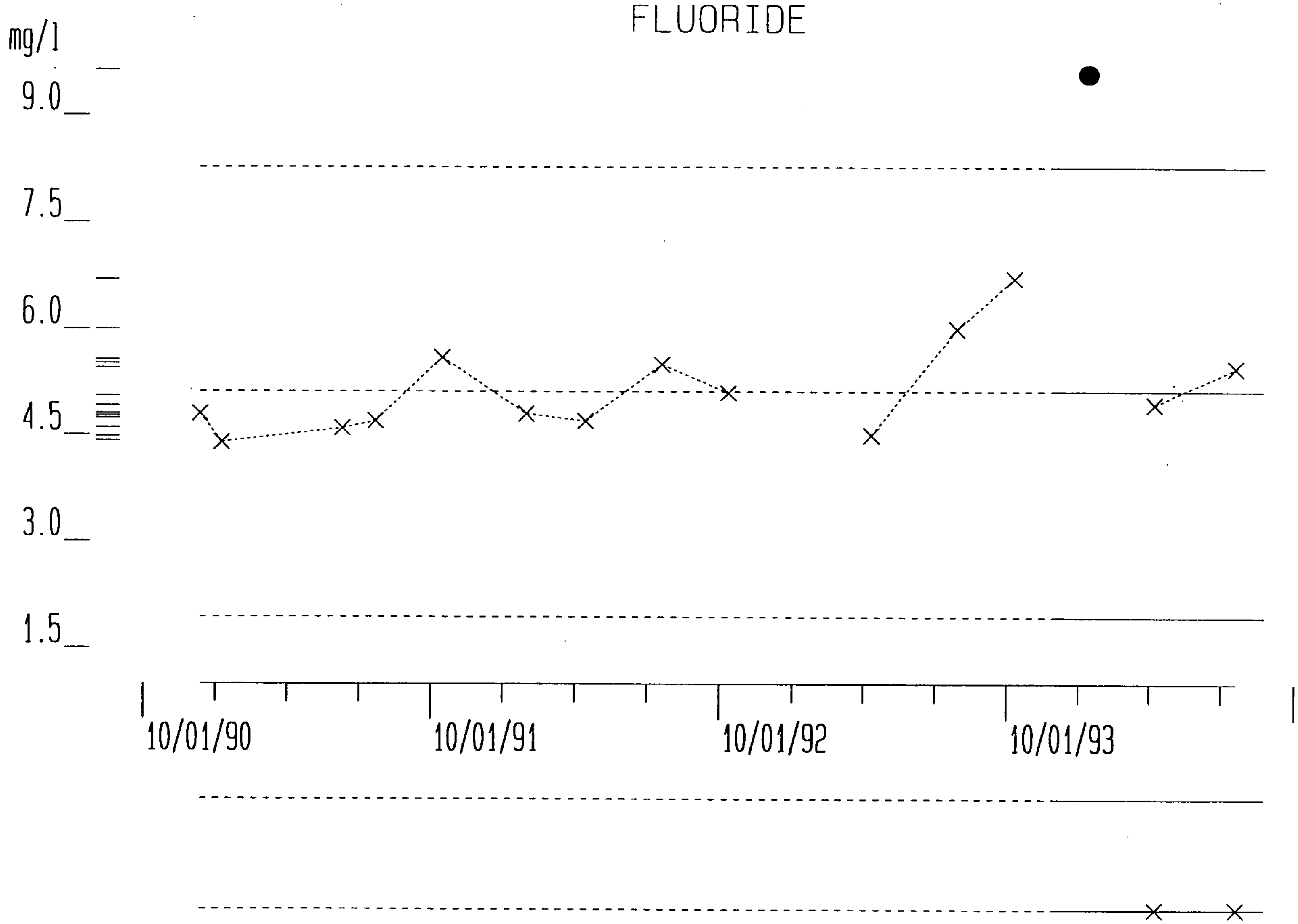
Warning: High serial correlation.

January 19, 1995

Solar Evaporation Ponds

Well 2686

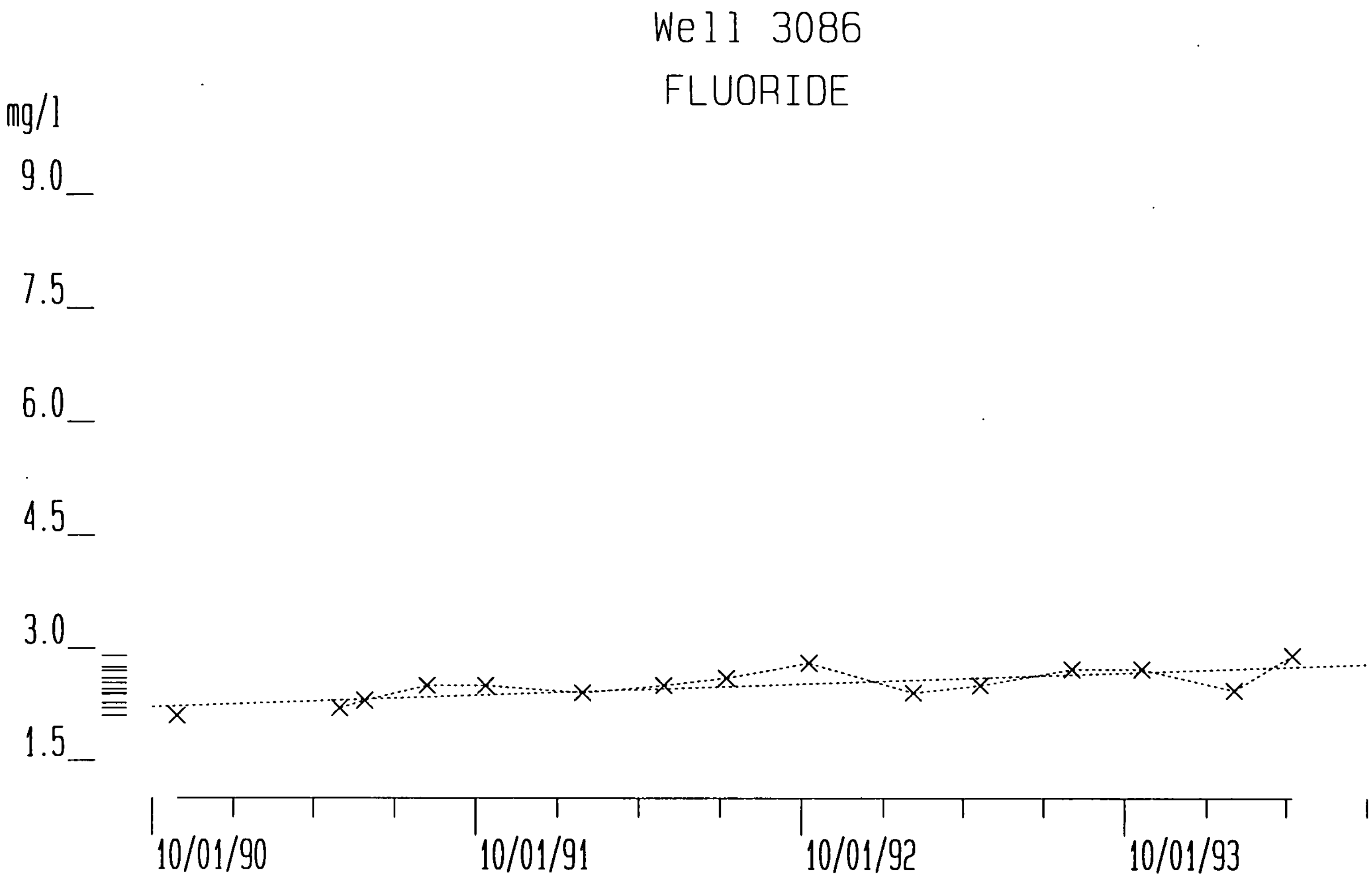
FLUORIDE



Combined Shewhart-CUSUM control charts

January 19, 1995

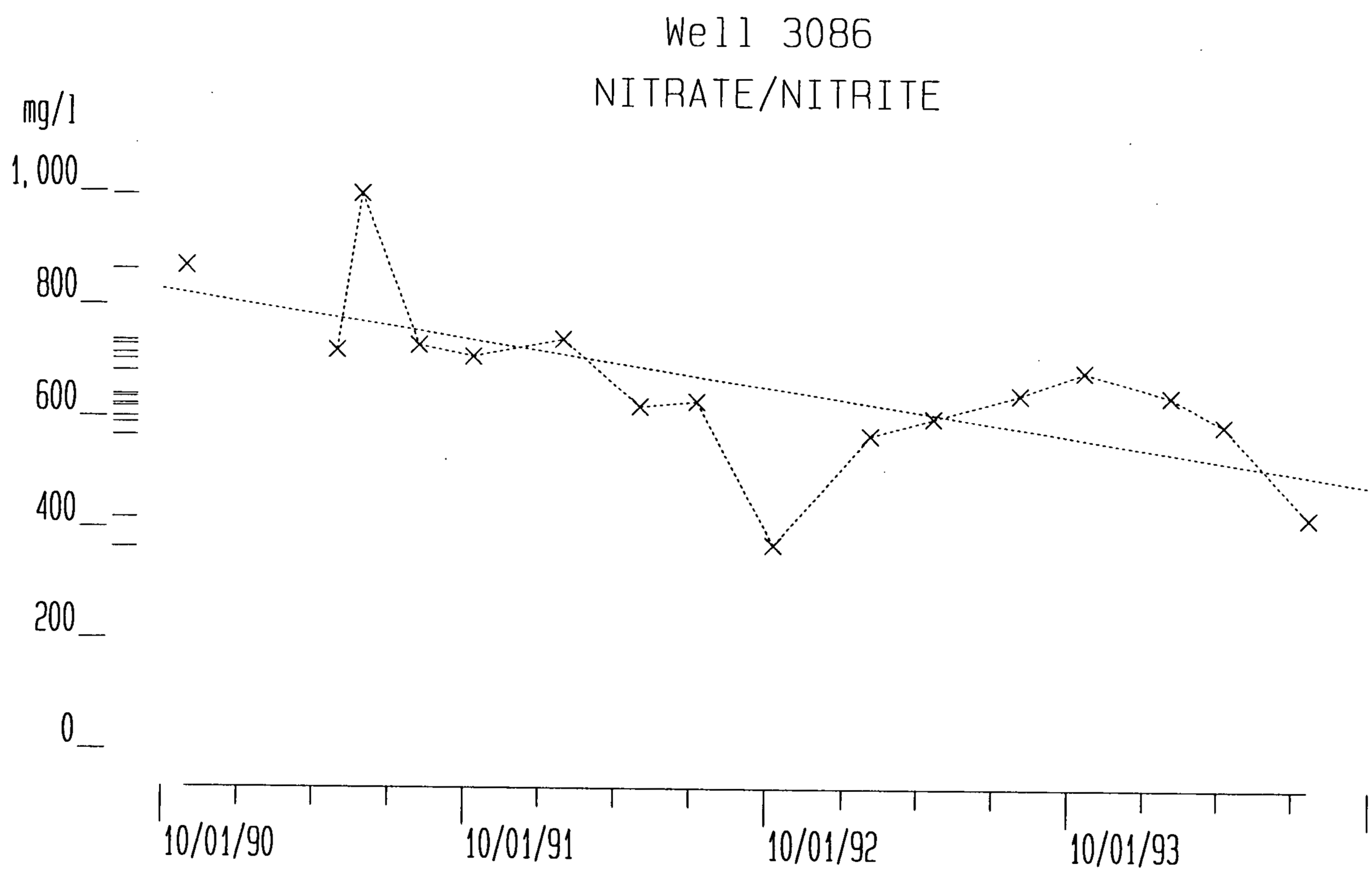
Solar Evaporation Ponds



Slope of regression line is 0.1485 mg/l per year.

January 19, 1995

Solar Evaporation Ponds



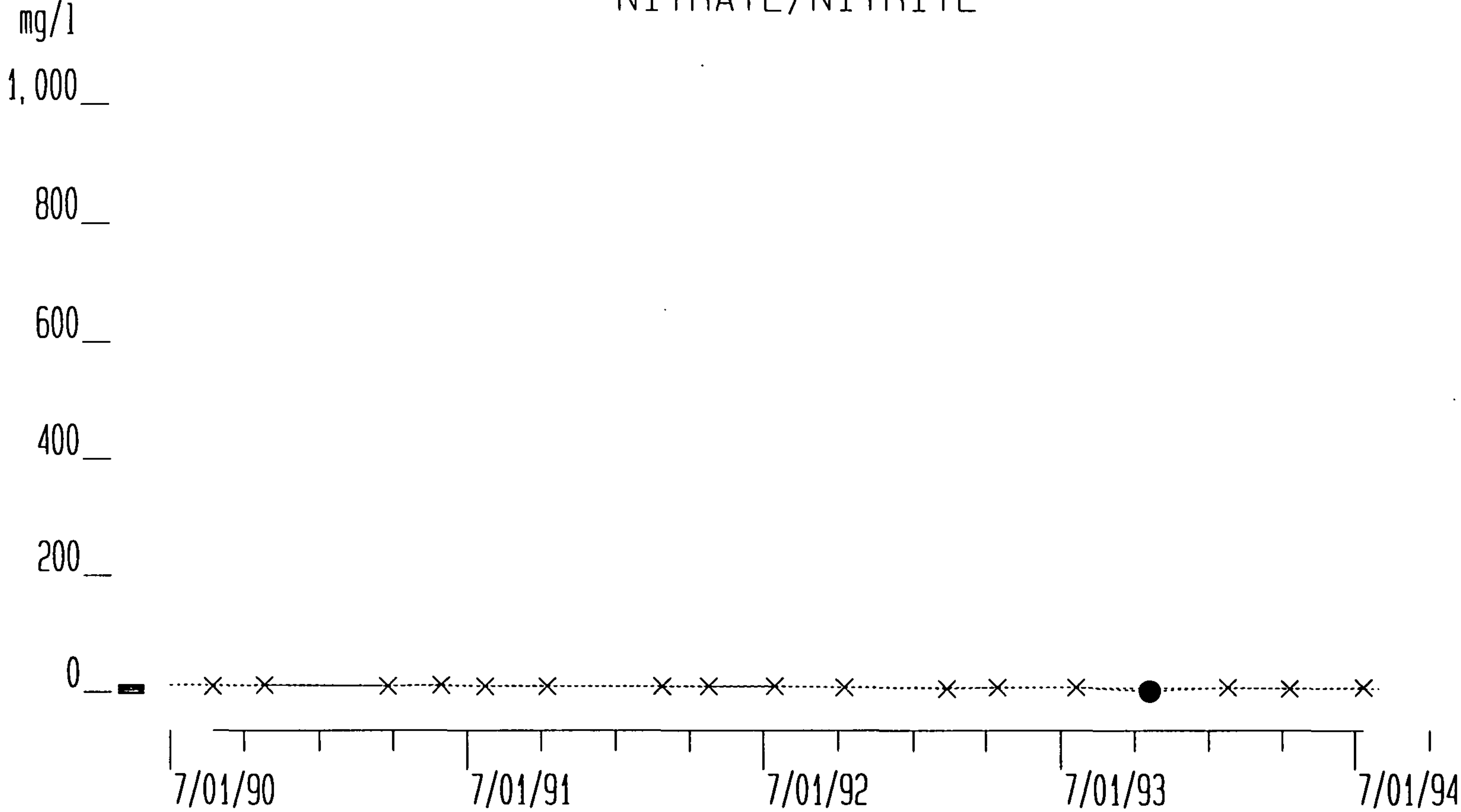
Slope of regression line is -86.0411 mg/l per year.

January 19, 1995

Solar Evaporation Ponds

Well P209389

NITRATE/NITRITE

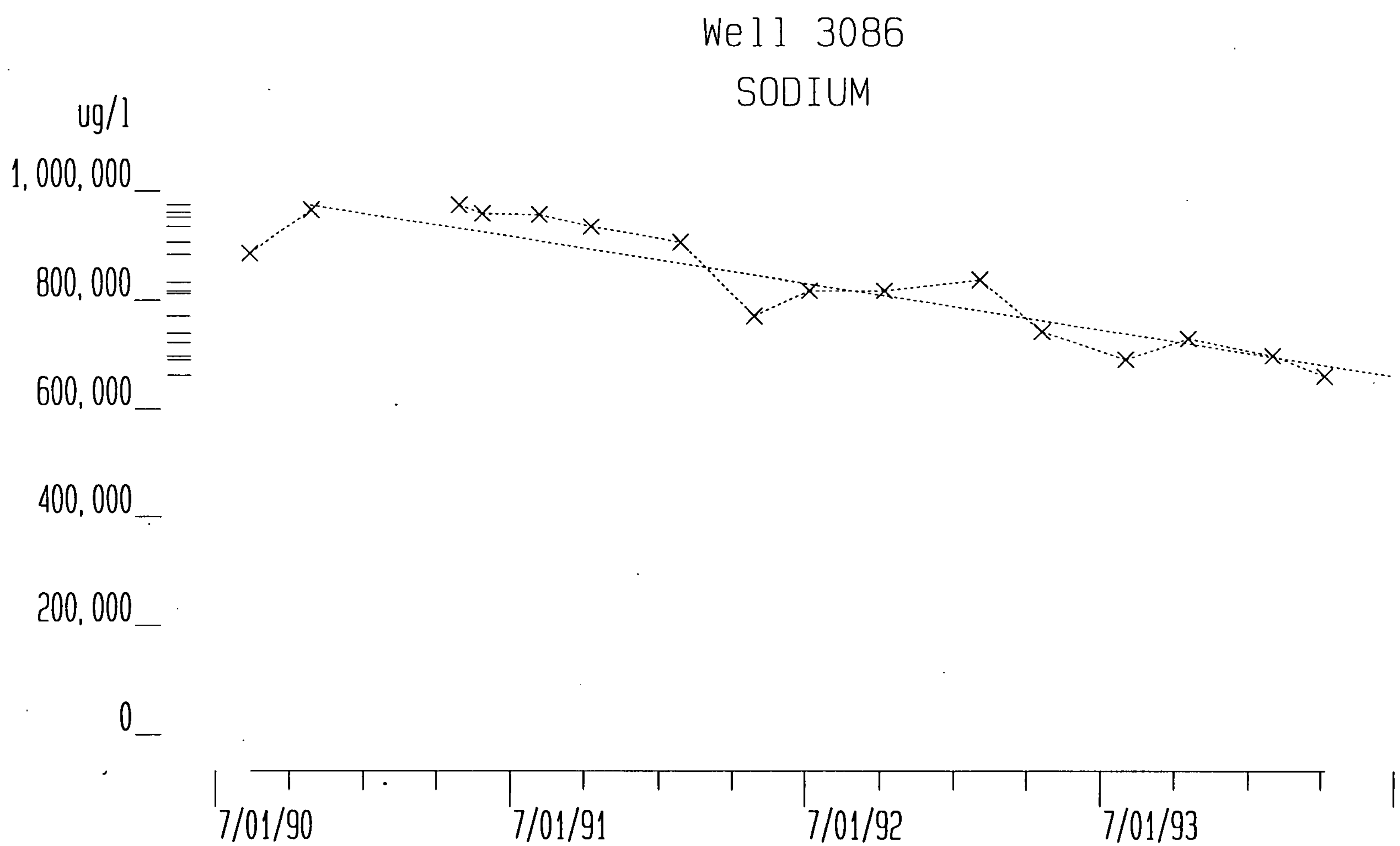


Slope of regression line is -1.3322 mg/l per year.

Warning: High serial correlation.

January 19, 1995

Solar Evaporation Ponds

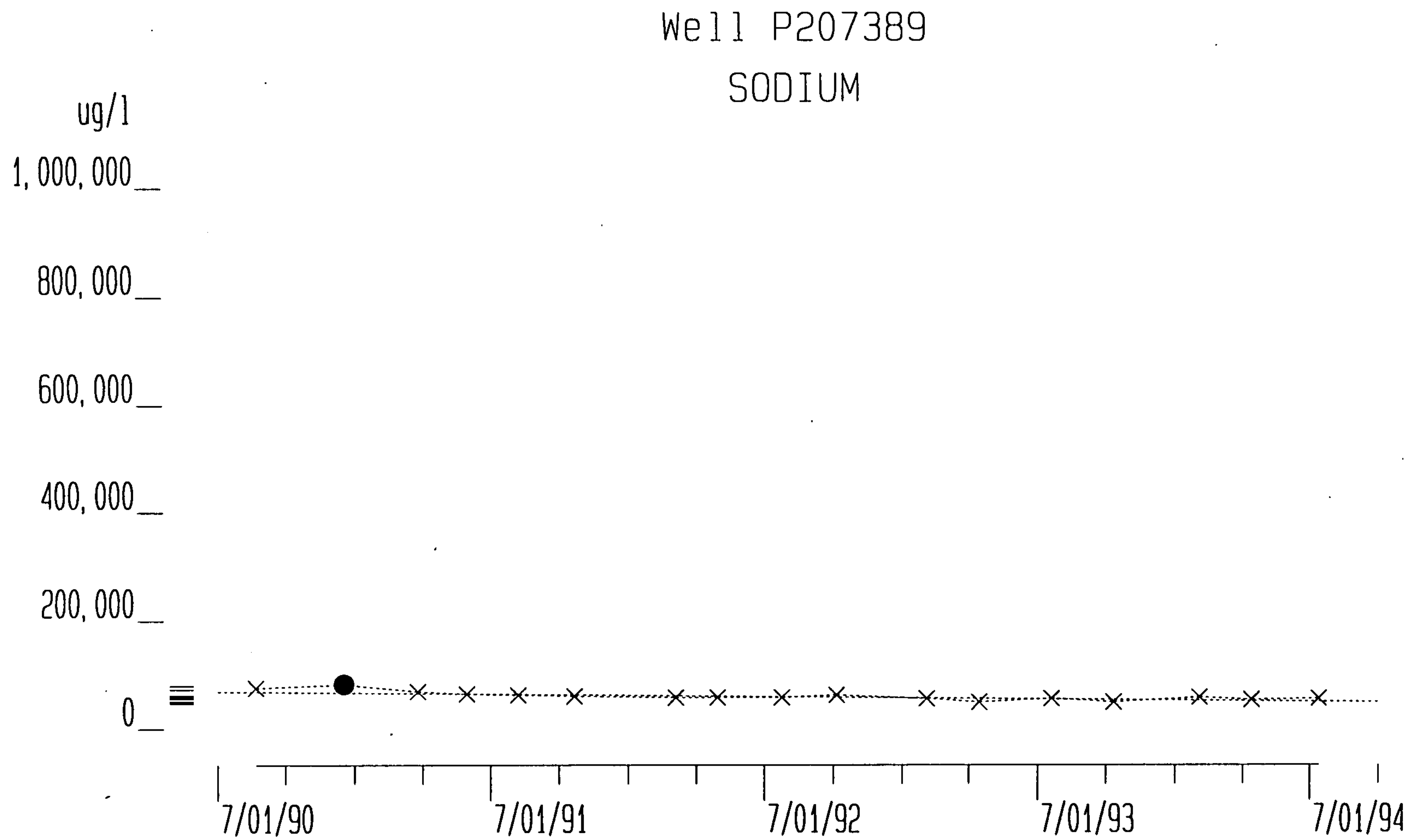


Slope of regression line is -85965.2521 ug/l per year.

Warning: High serial correlation.

January 19, 1995

Solar Evaporation Ponds

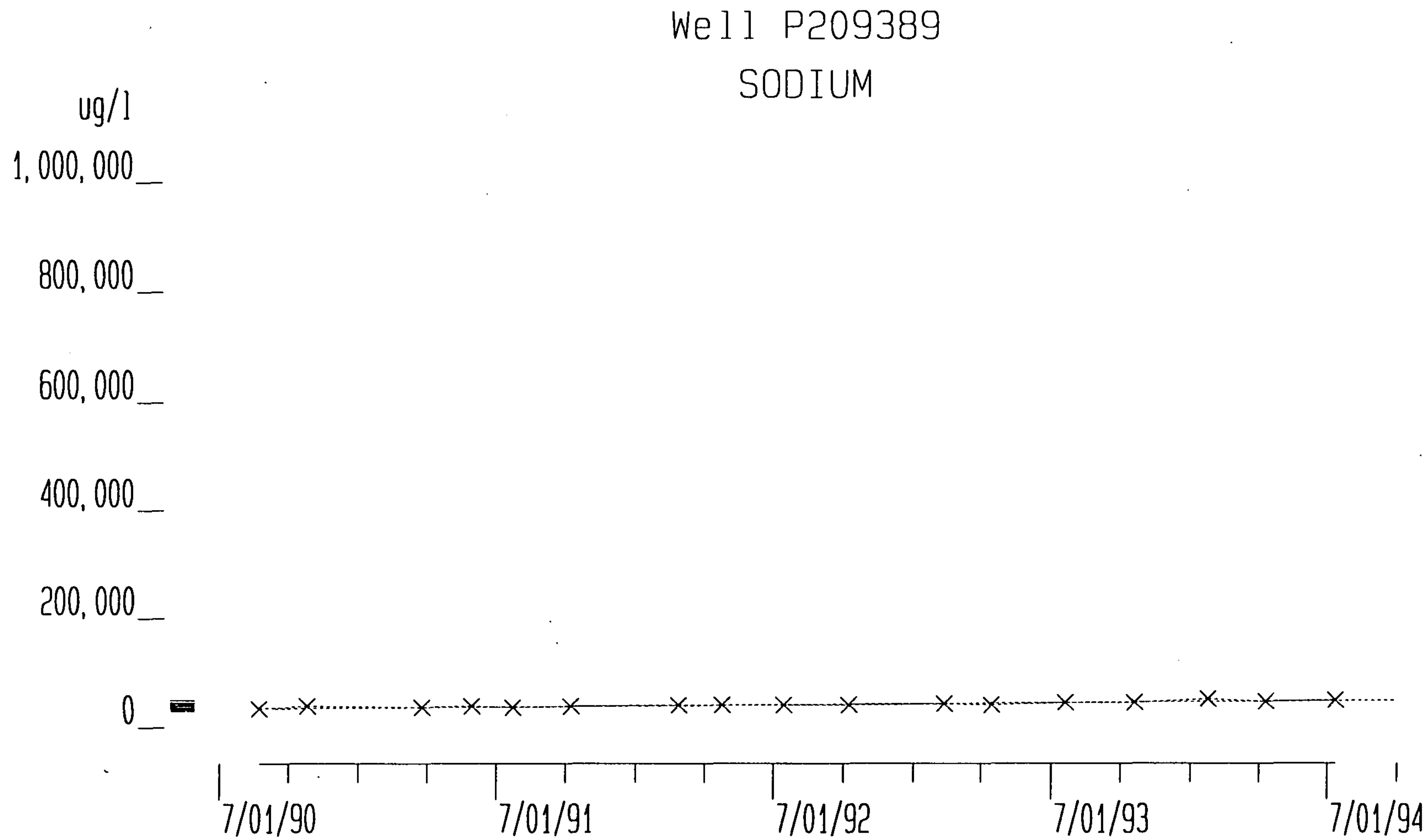


Slope of regression line is -4427.7593 ug/l per year.

Warning: High serial correlation.

January 19, 1995

Solar Evaporation Ponds



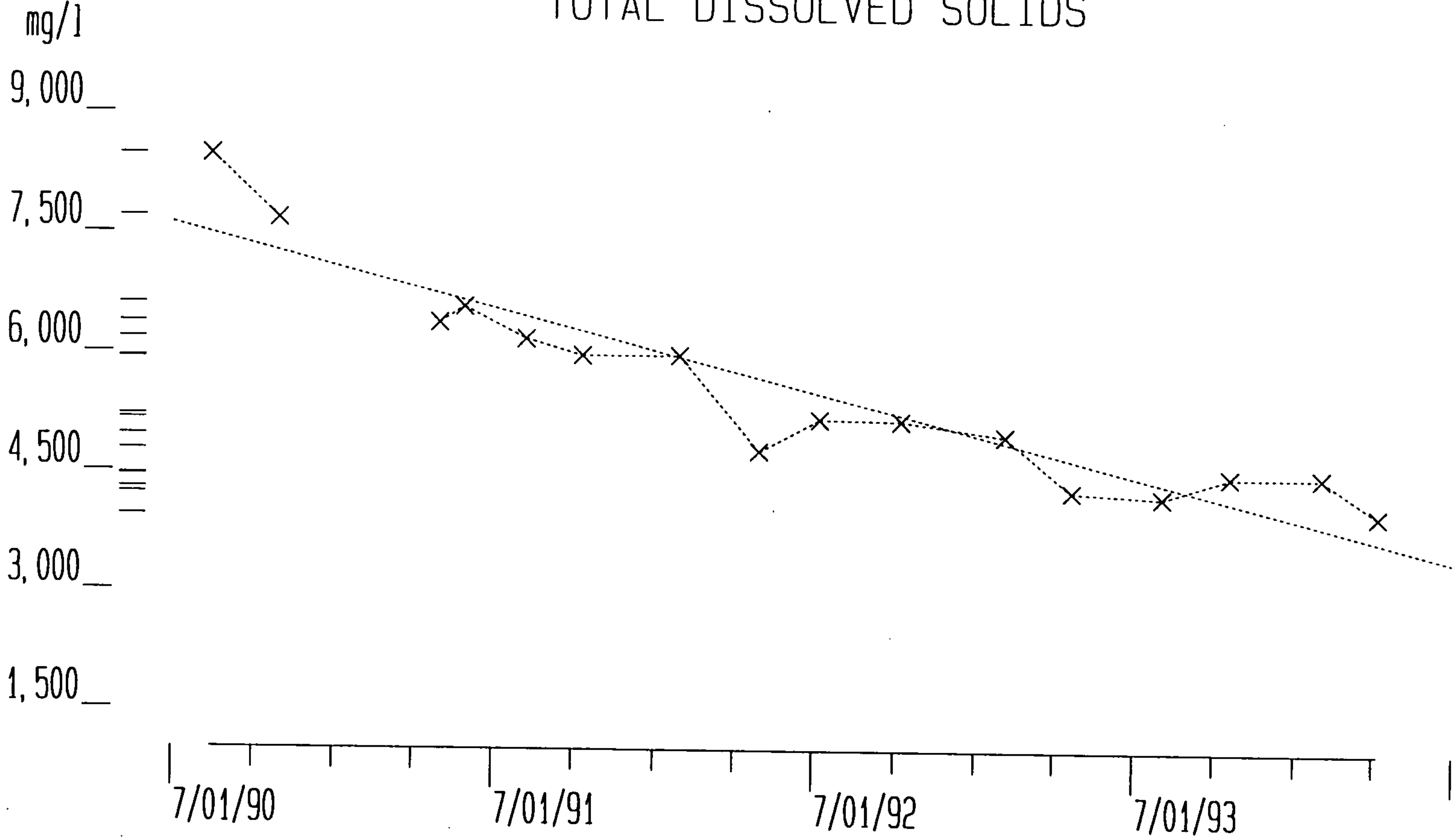
Slope of regression line is 3581.1577 ug/l per year.

Warning: High serial correlation.

January 19, 1995

Solar Evaporation Ponds

Well 3086
TOTAL DISSOLVED SOLIDS

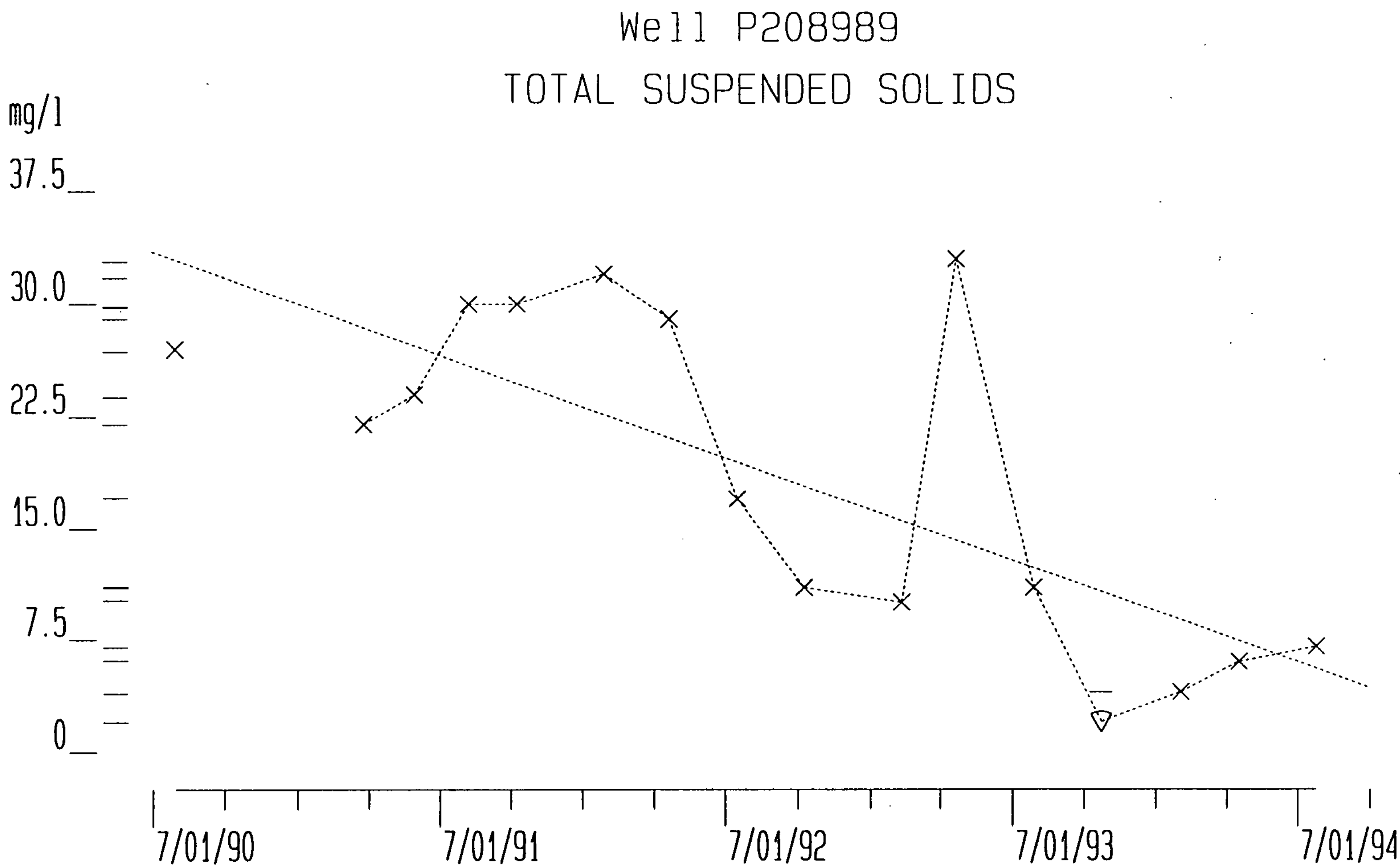


Slope of regression line is -1044.0670 mg/l per year.

Warning: High serial correlation.

January 19, 1995

Solar Evaporation Ponds

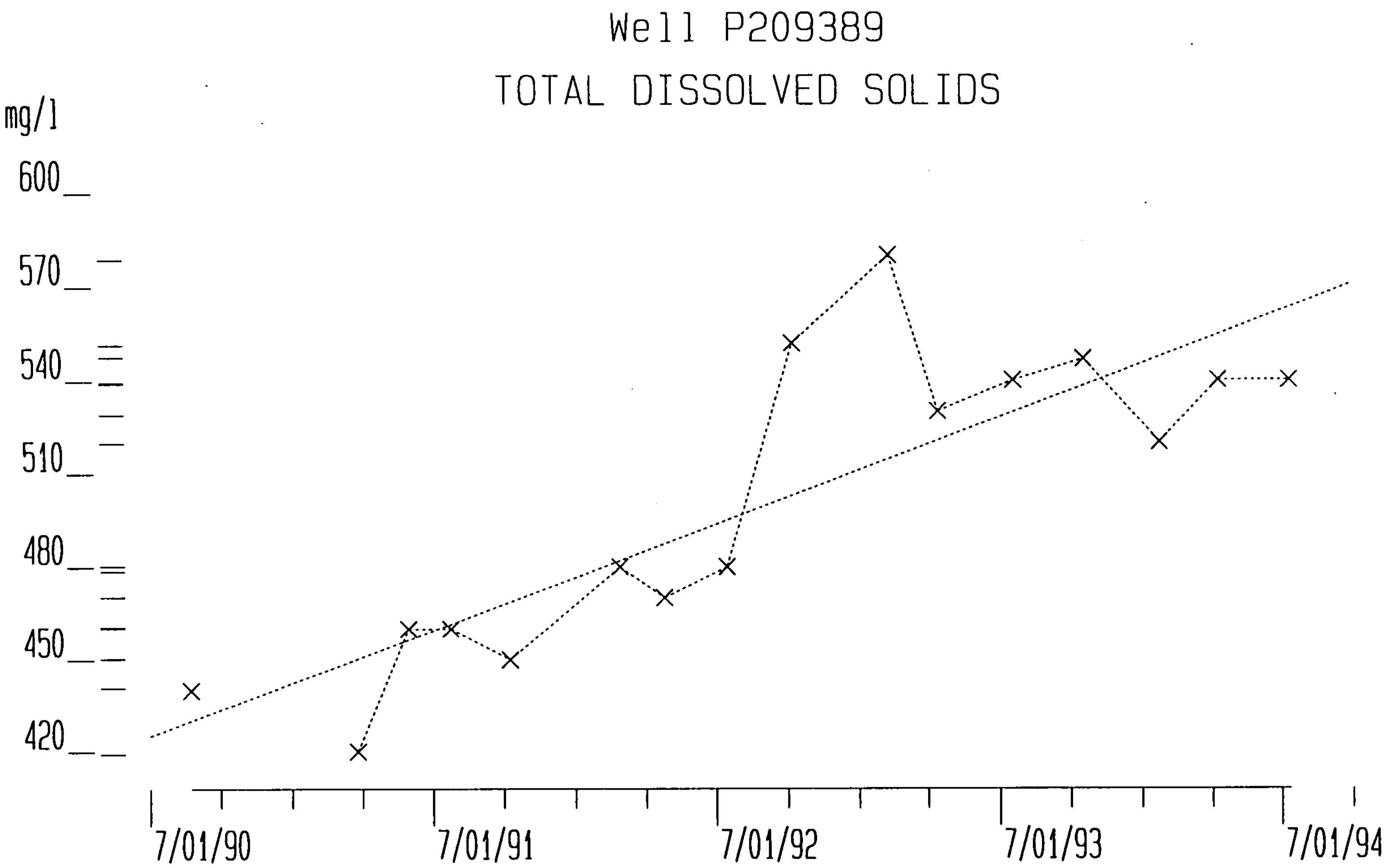


Slope of regression line is -6.8795 mg/l per year.

Warning: High serial correlation.

January 19, 1995

Solar Evaporation Ponds



Slope of regression line is 34.2730 mg/l per year.

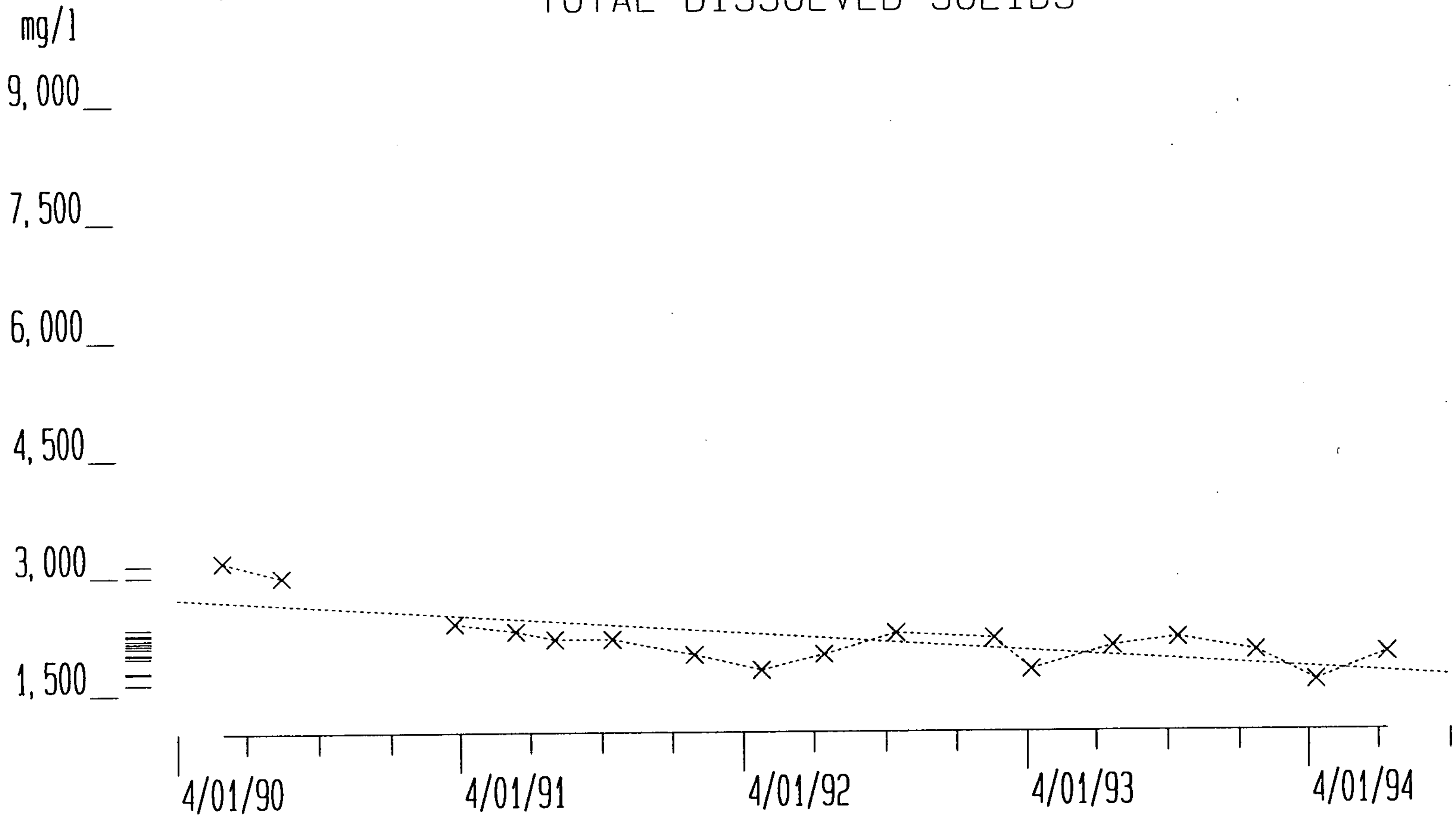
Warning: High serial correlation.

January 19, 1995

Solar Evaporation Ponds

Well P209489

TOTAL DISSOLVED SOLIDS



Slope of regression line is -227.0708 mg/l per year.

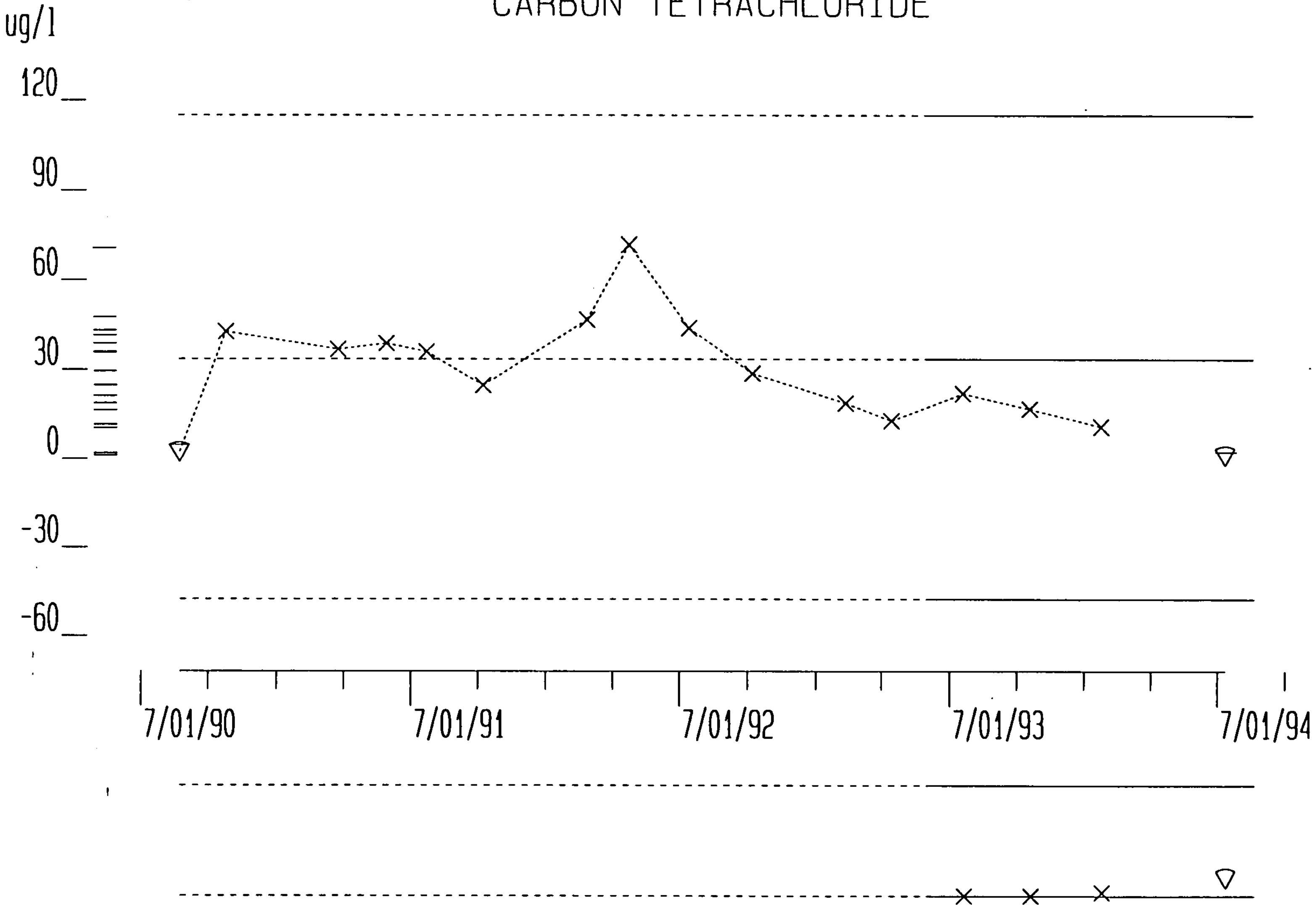
Warning: High serial correlation.

January 19, 1995

Solar Evaporation Ponds

Well P209389

CARBON TETRACHLORIDE

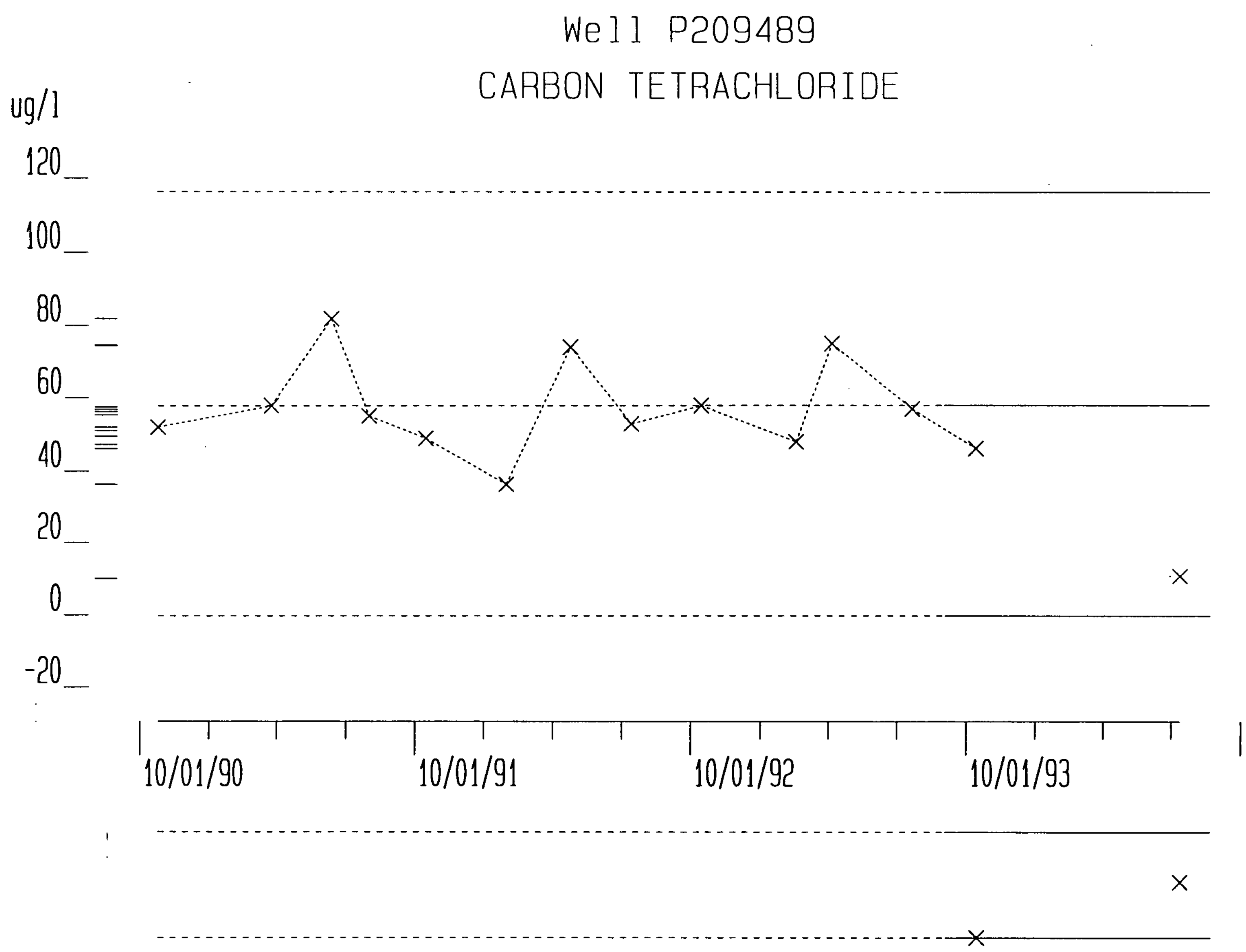


Combined Shewhart-CUSUM control charts

Warning: High serial correlation.

January 20, 1995

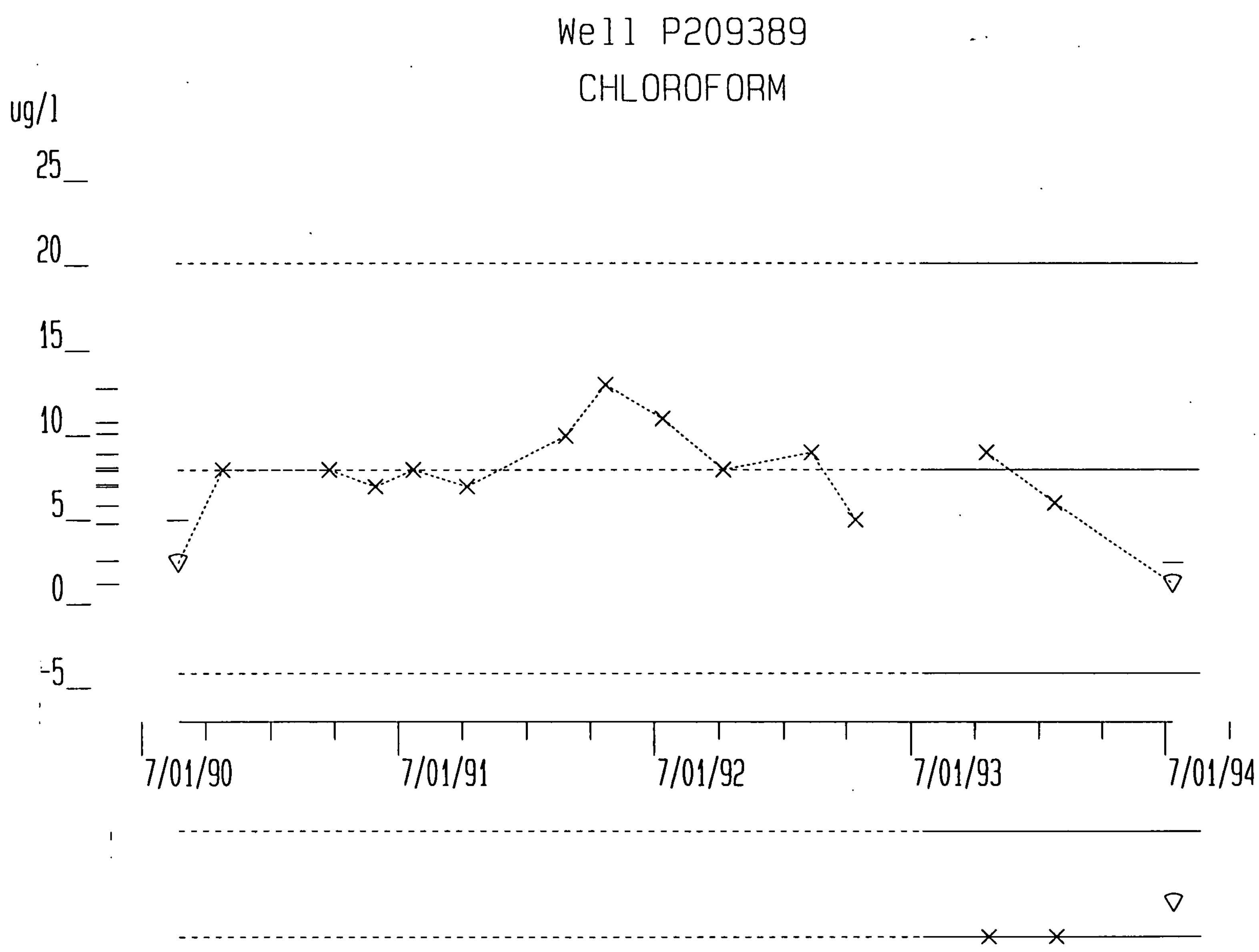
Solar Evaporation Ponds



Combined Shewhart-CUSUM control charts

January 20, 1995

Solar Evaporation Ponds



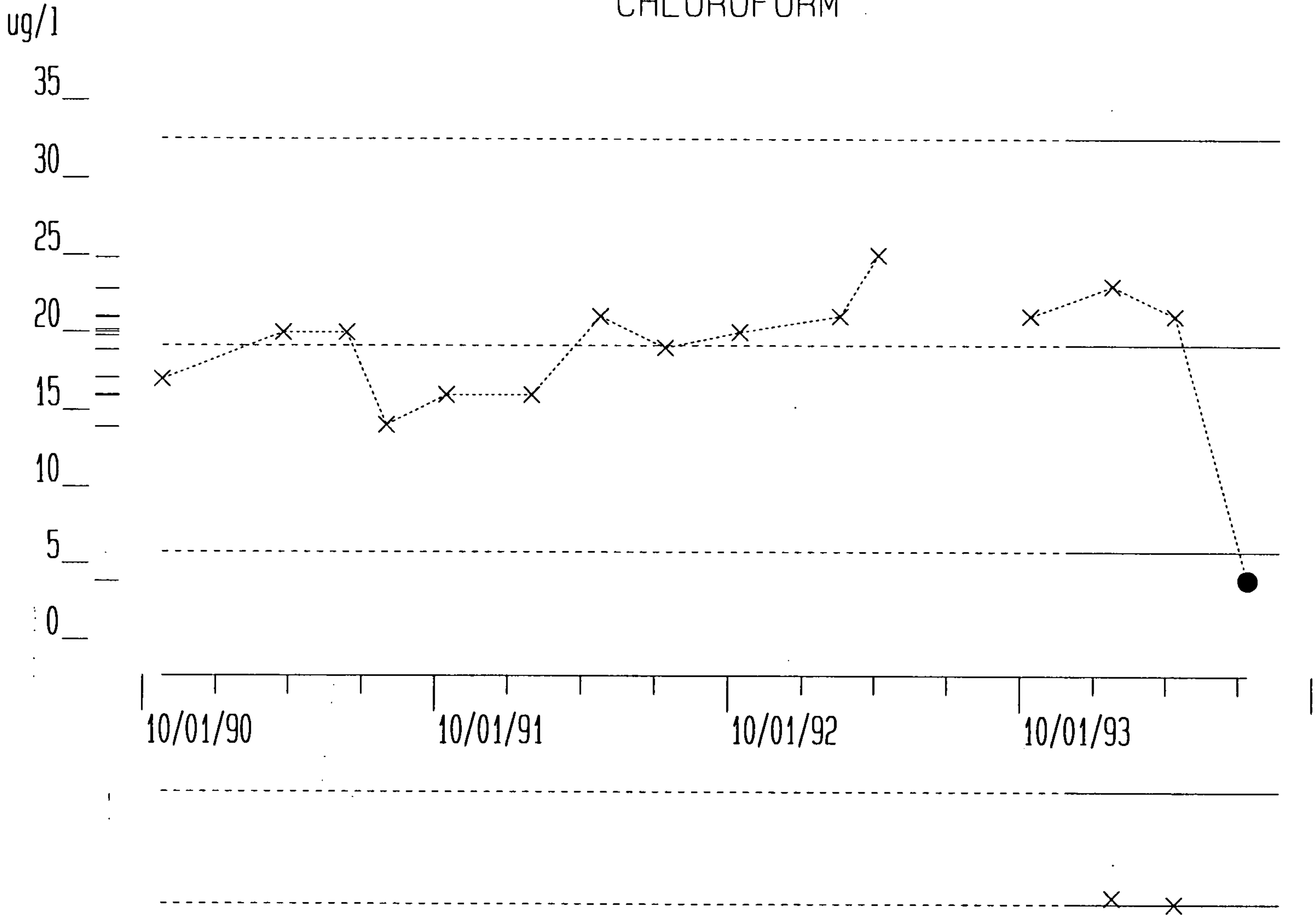
Combined Shewhart-CUSUM control charts

January 20, 1995

Solar Evaporation Ponds

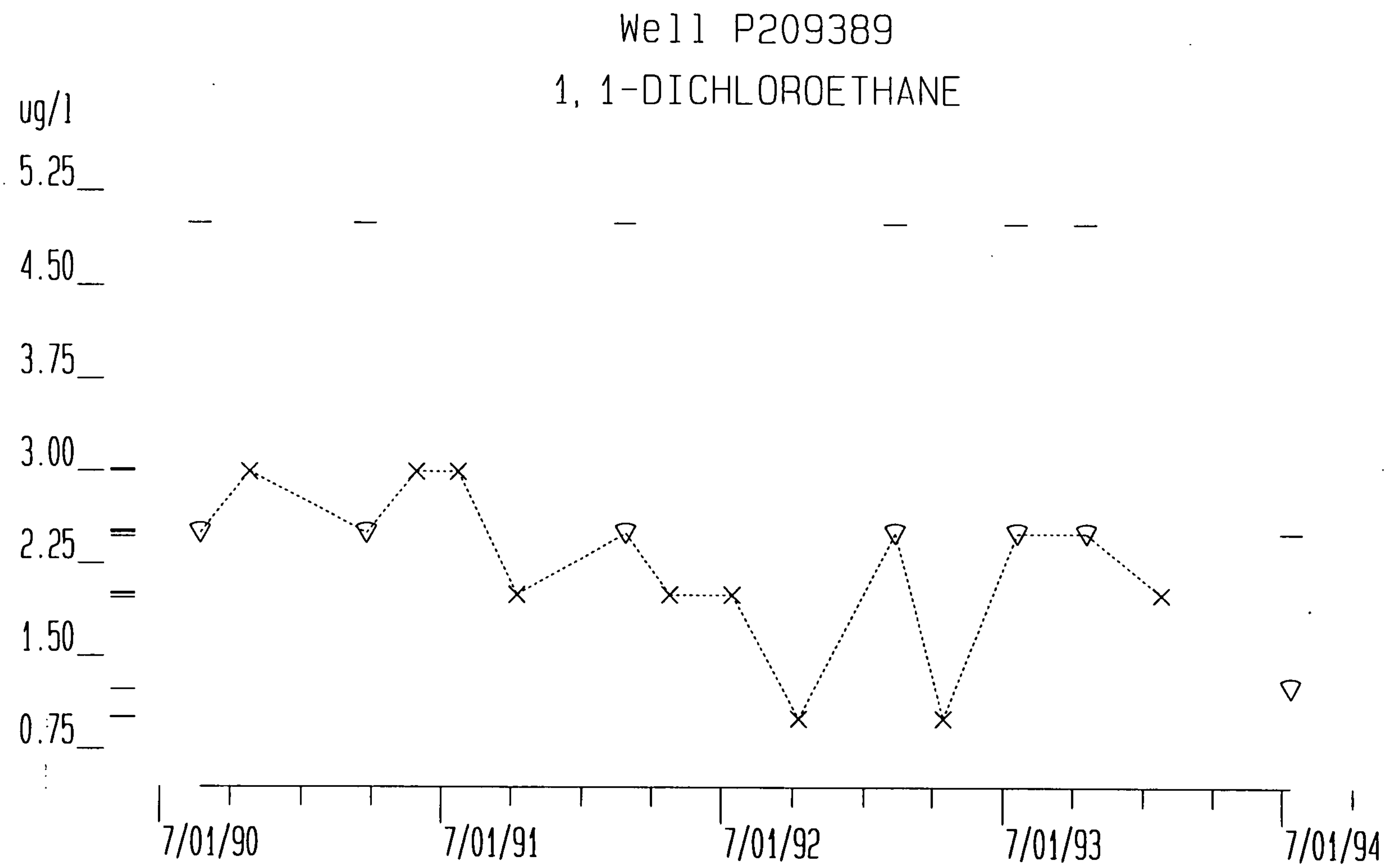
Well P209489

CHLOROFORM



Combined Shewhart-CUSUM control charts

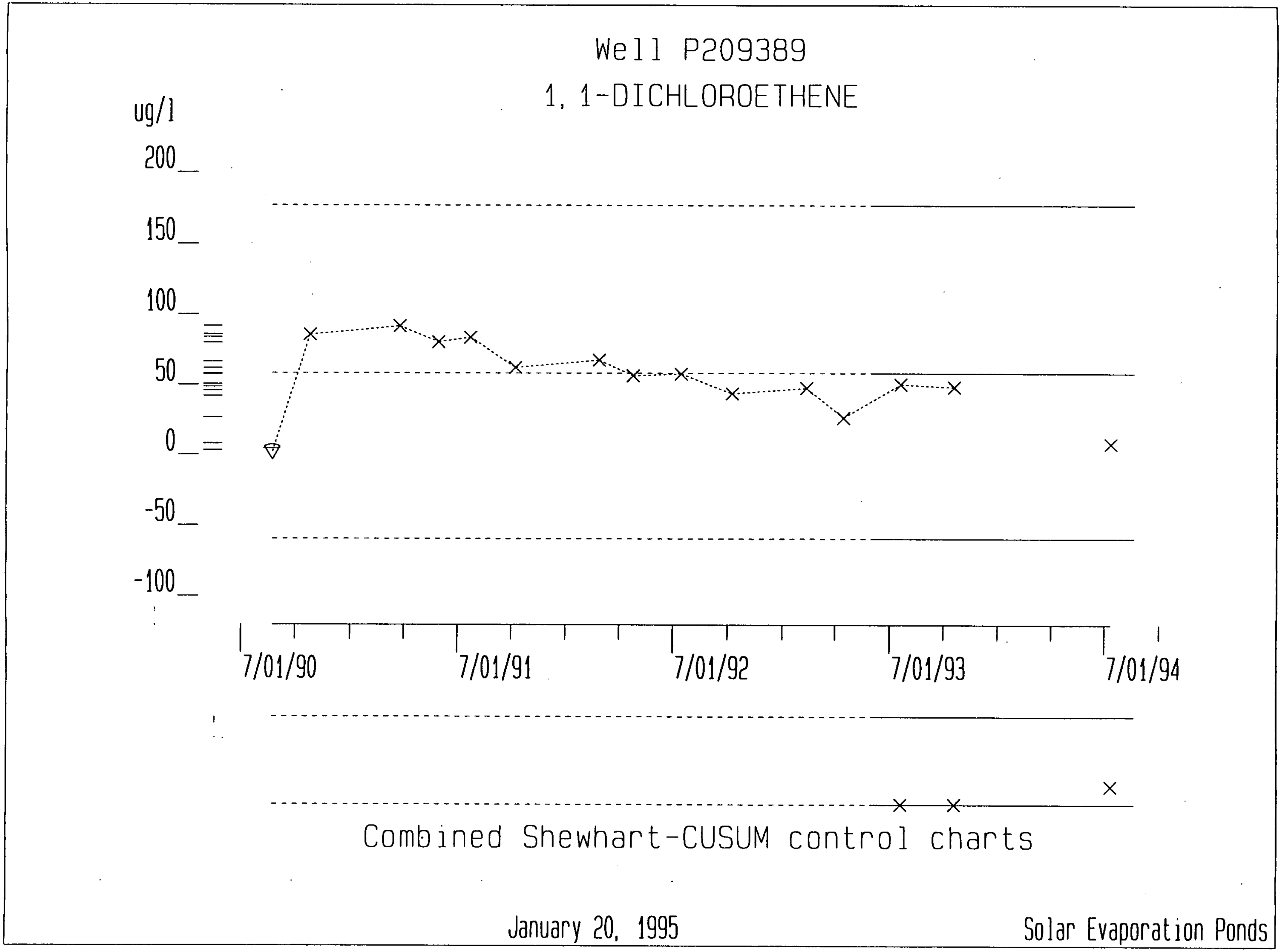
January 20, 1995 Solar Evaporation Ponds

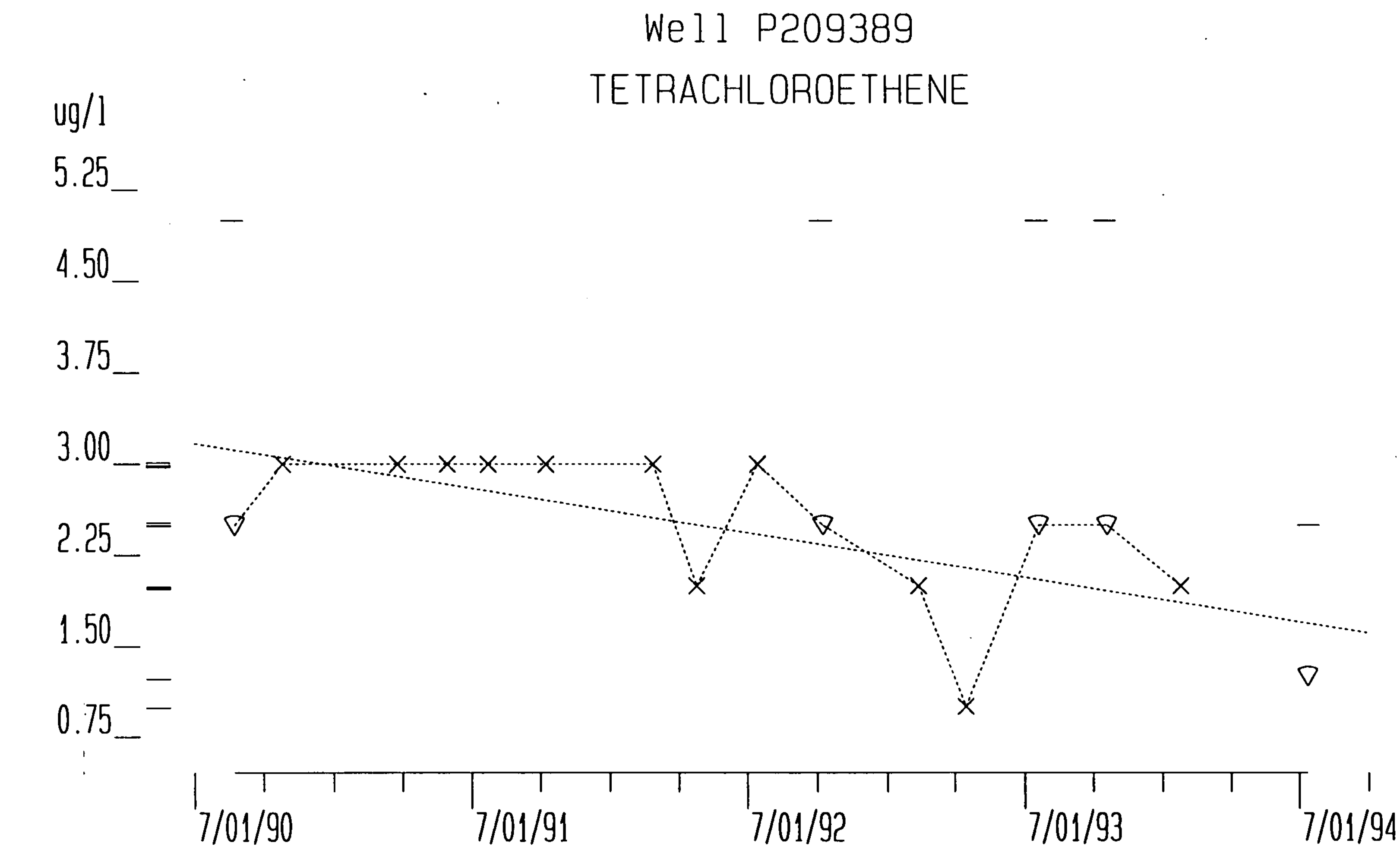


Note: Control Chart not tried, More than 25% non detects.

January 20, 1995

Solar Evaporation Ponds


Well P209389
1, 1-DICHLOROETHENE
ug/l
200
150
100
50
0
-50
-100
7/01/90
7/01/91
7/01/92
7/01/93
7/01/94
Combined Shewhart-CUSUM control charts
January 20, 1995
Solar Evaporation Ponds



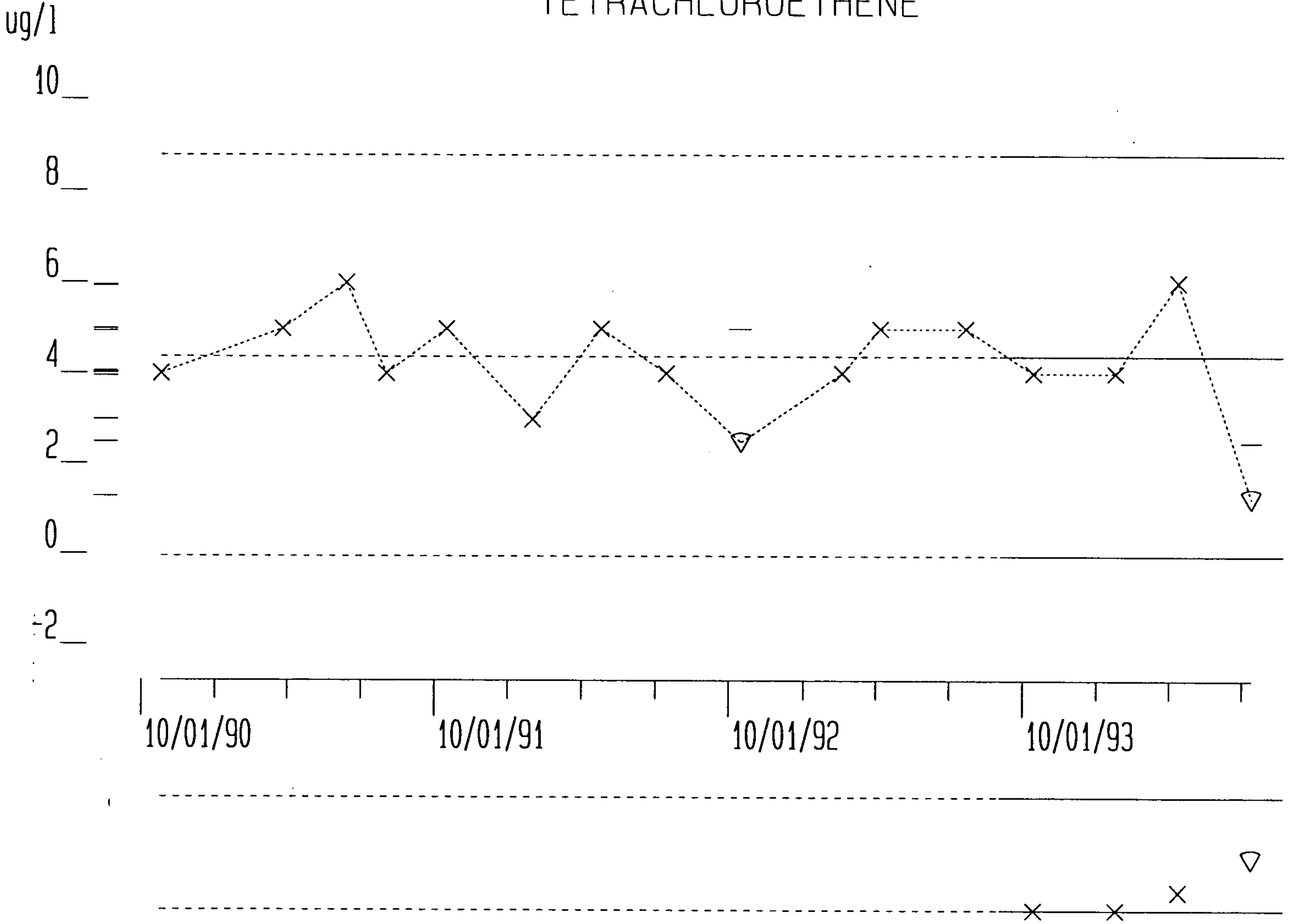
Slope of regression line is -0.3676 ug/l per year.

January 20, 1995

Solar Evaporation Ponds

Well P209489

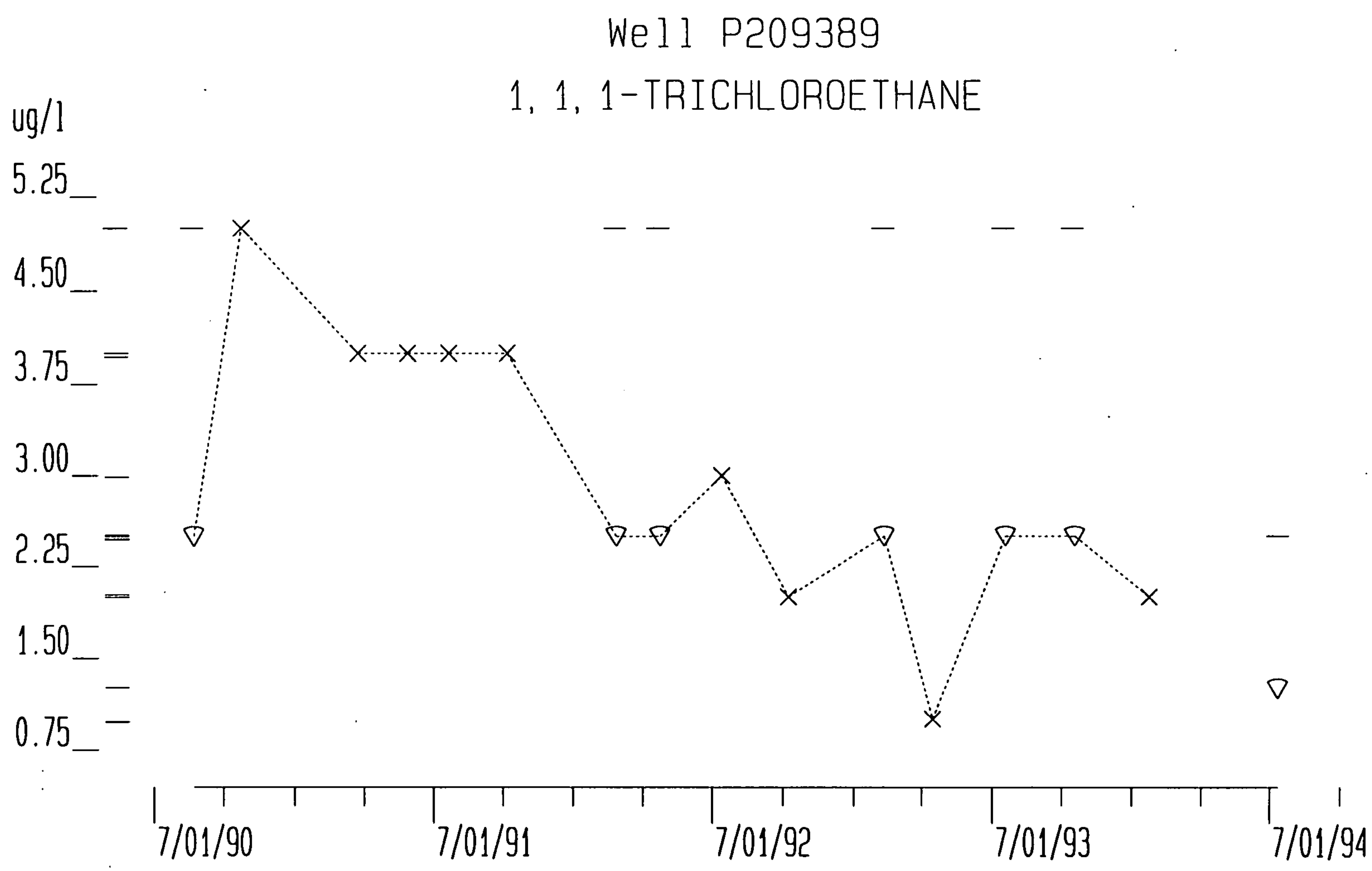
TETRACHLOROETHENE



Combined Shewhart-CUSUM control charts

January 20, 1995

Solar Evaporation Ponds

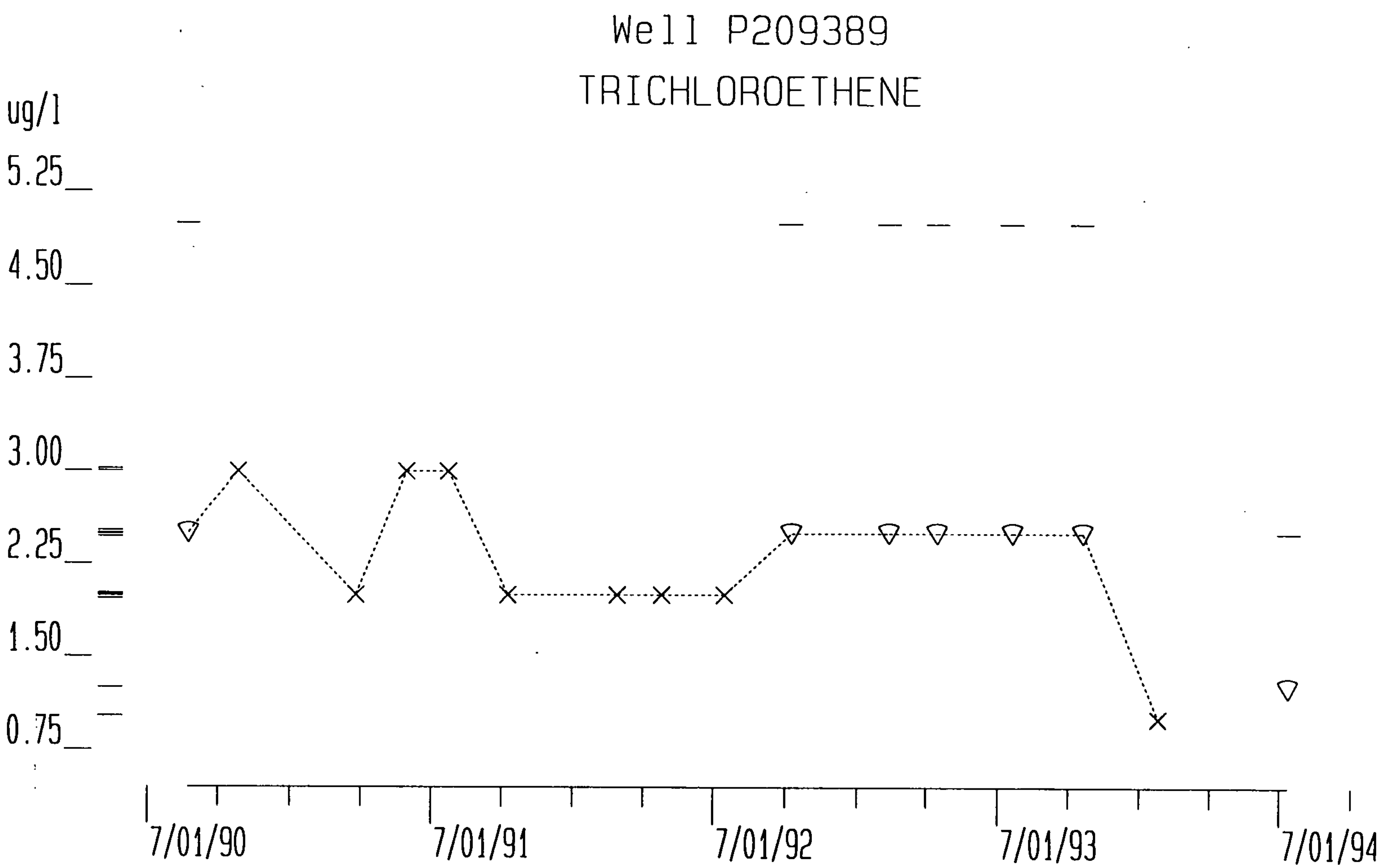


Note: Not trended, More than 40% non detects.

Warning: High serial correlation.

January 20, 1995

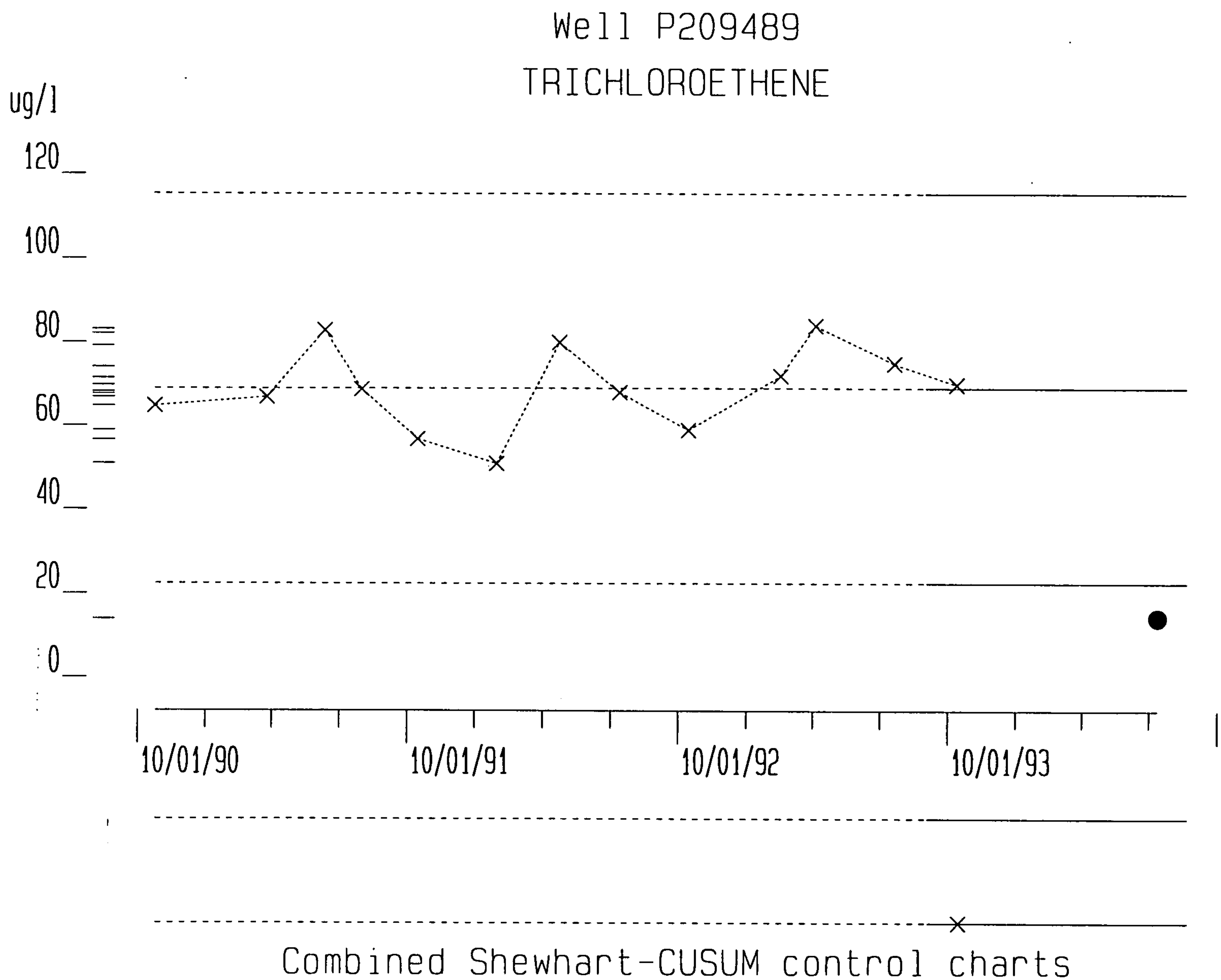
Solar Evaporation Ponds



Note: Control Chart not tried, More than 25% non detects.

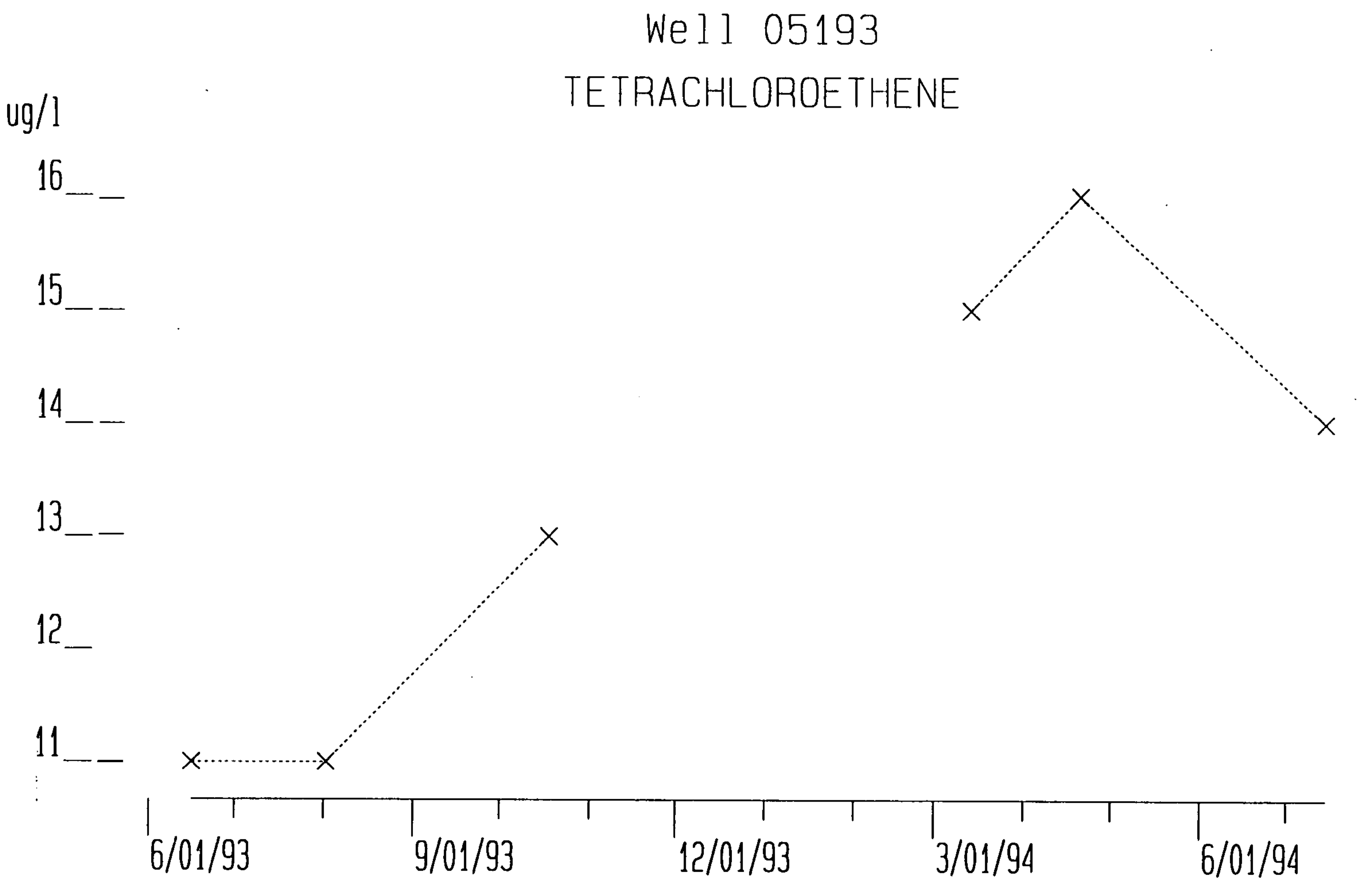
January 20, 1995

Solar Evaporation Ponds



January 20, 1995

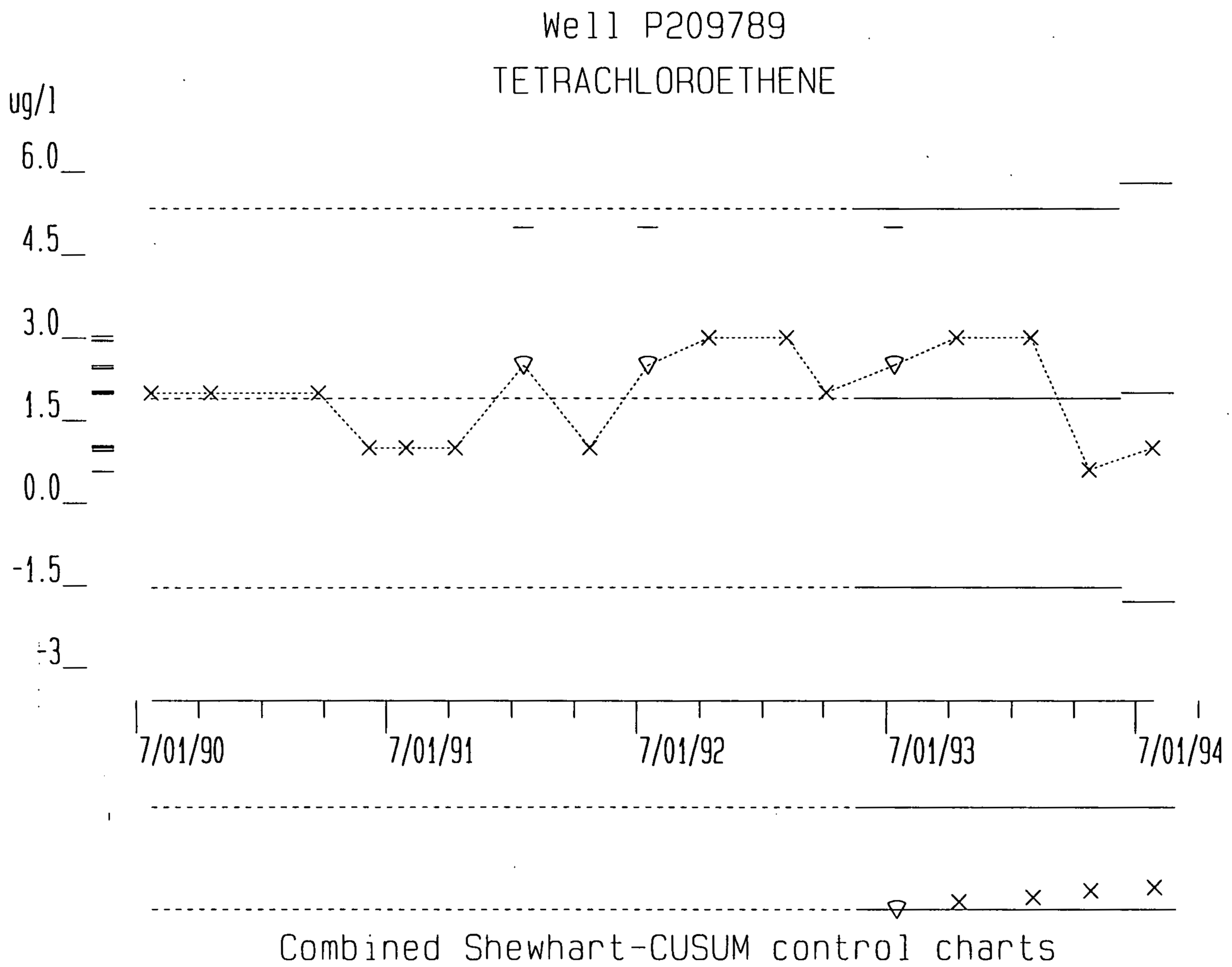
Solar Evaporation Ponds



Note: Not enough samples to Control Chart.

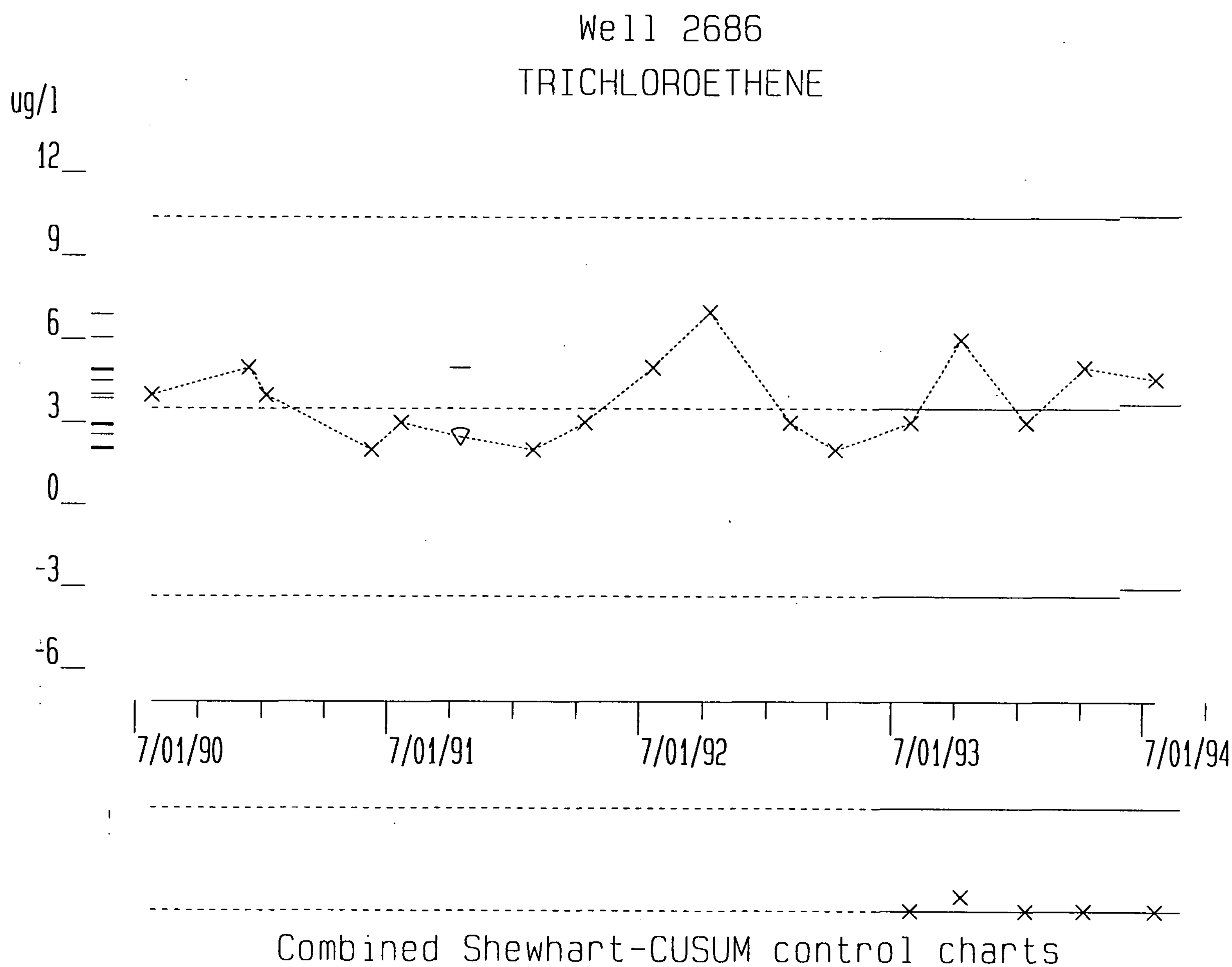
January 20, 1995

Solar Evaporation Ponds



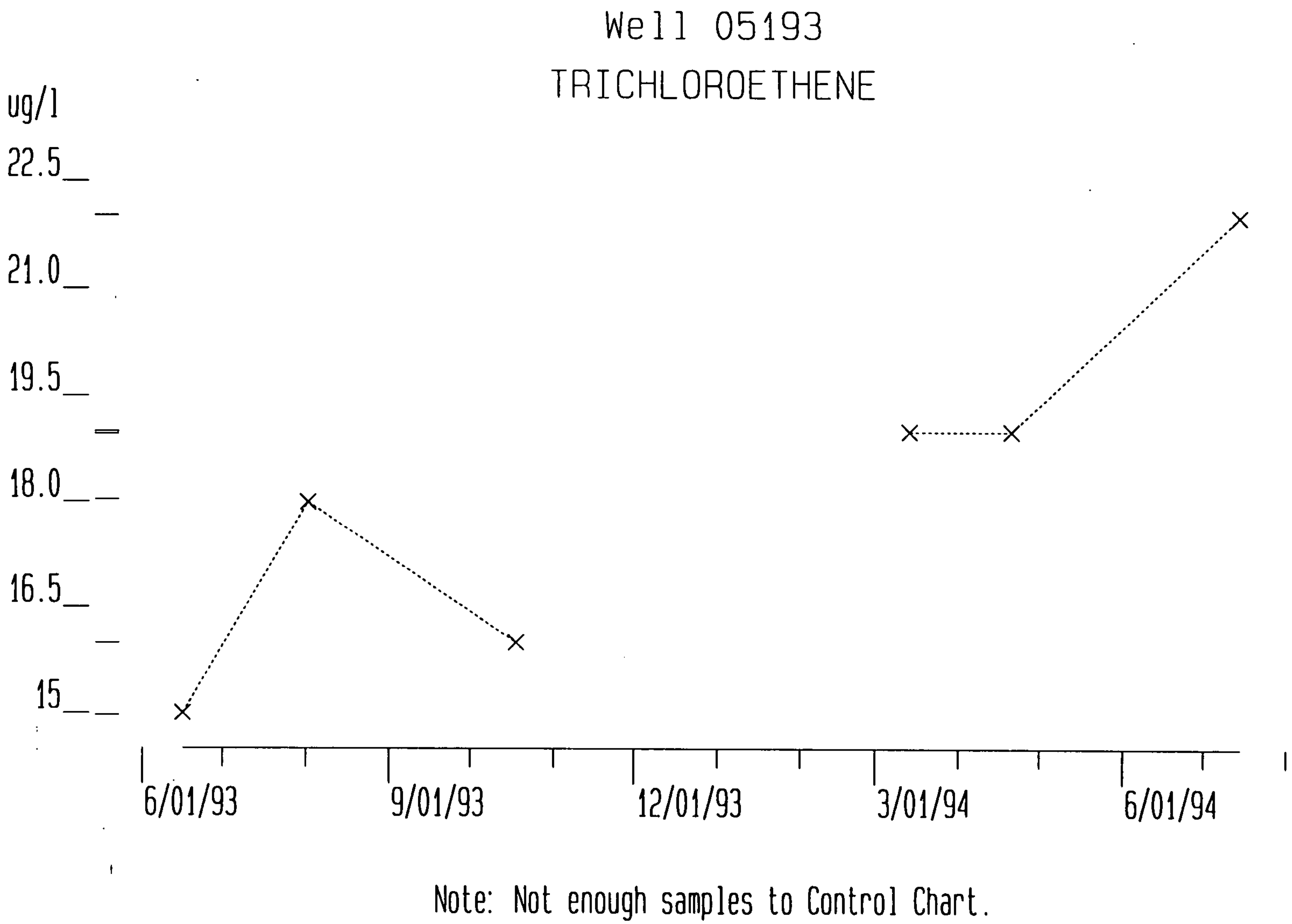
January 20, 1995

Solar Evaporation Ponds



January 20, 1995

Solar Evaporation Ponds

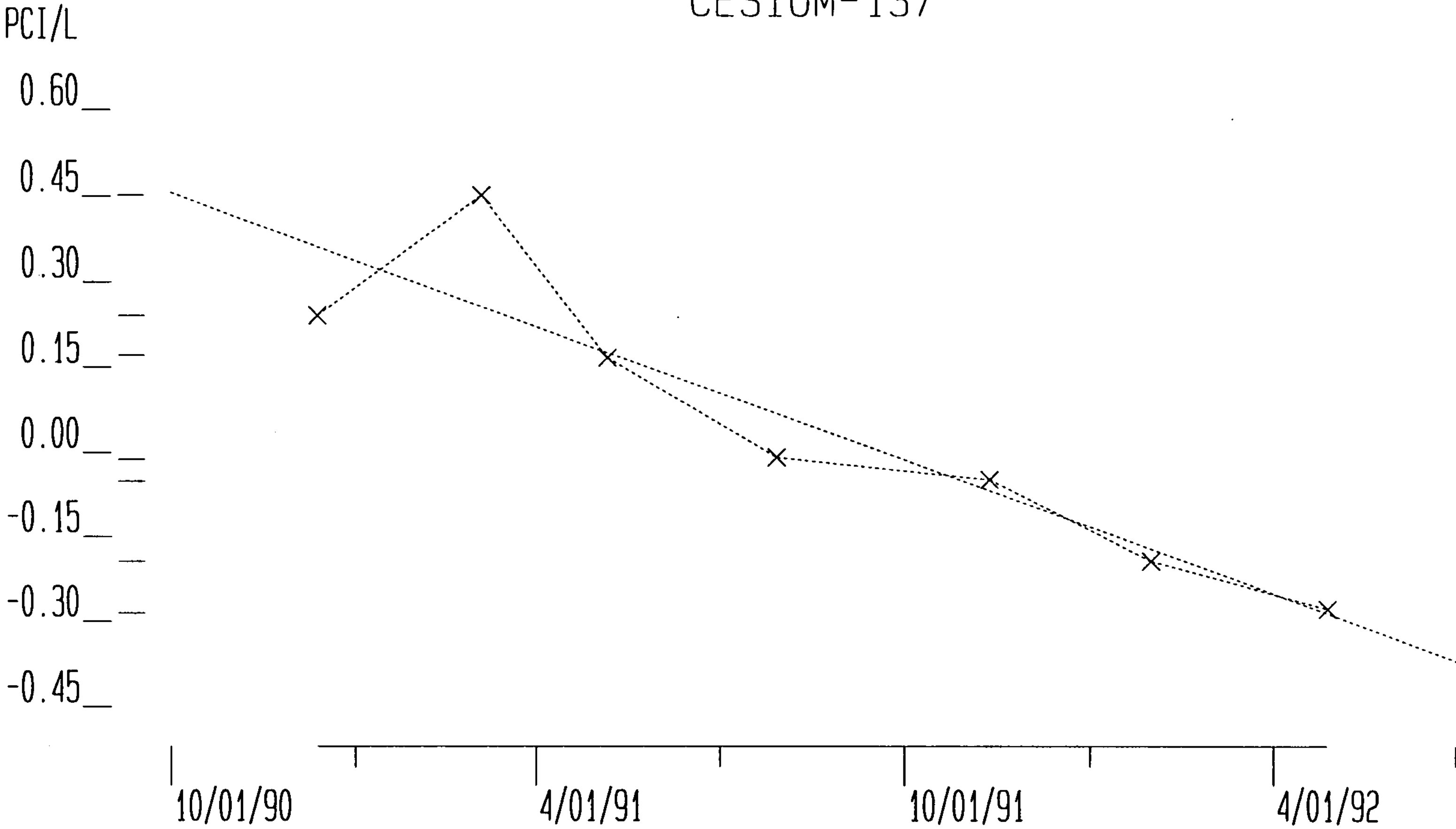


January 20, 1995

Solar Evaporation Ponds

Well B410789

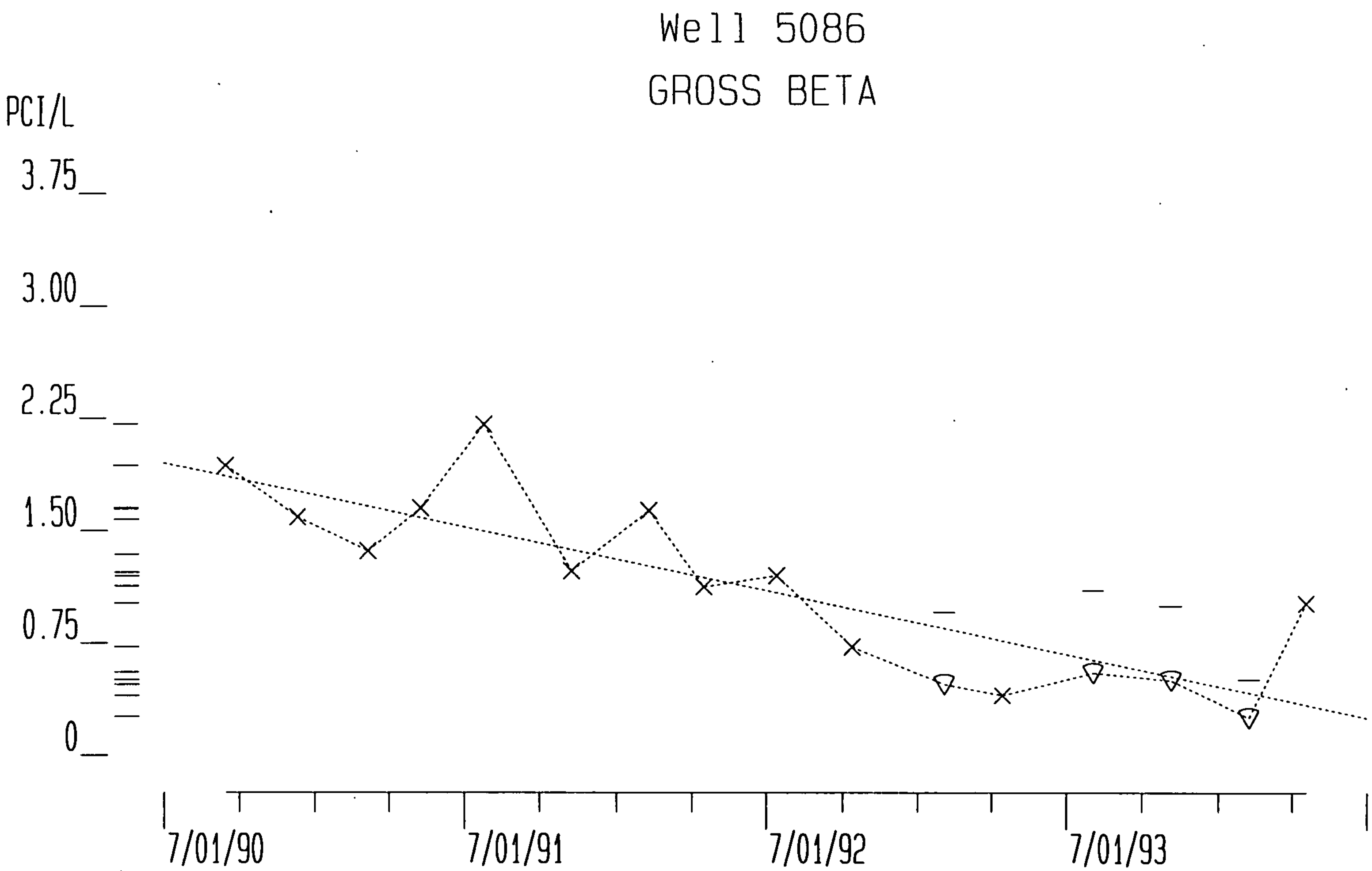
CESIUM-137



Slope of regression line is -0.4727 PCI/L per year.

January 20, 1995

West Spray Fields



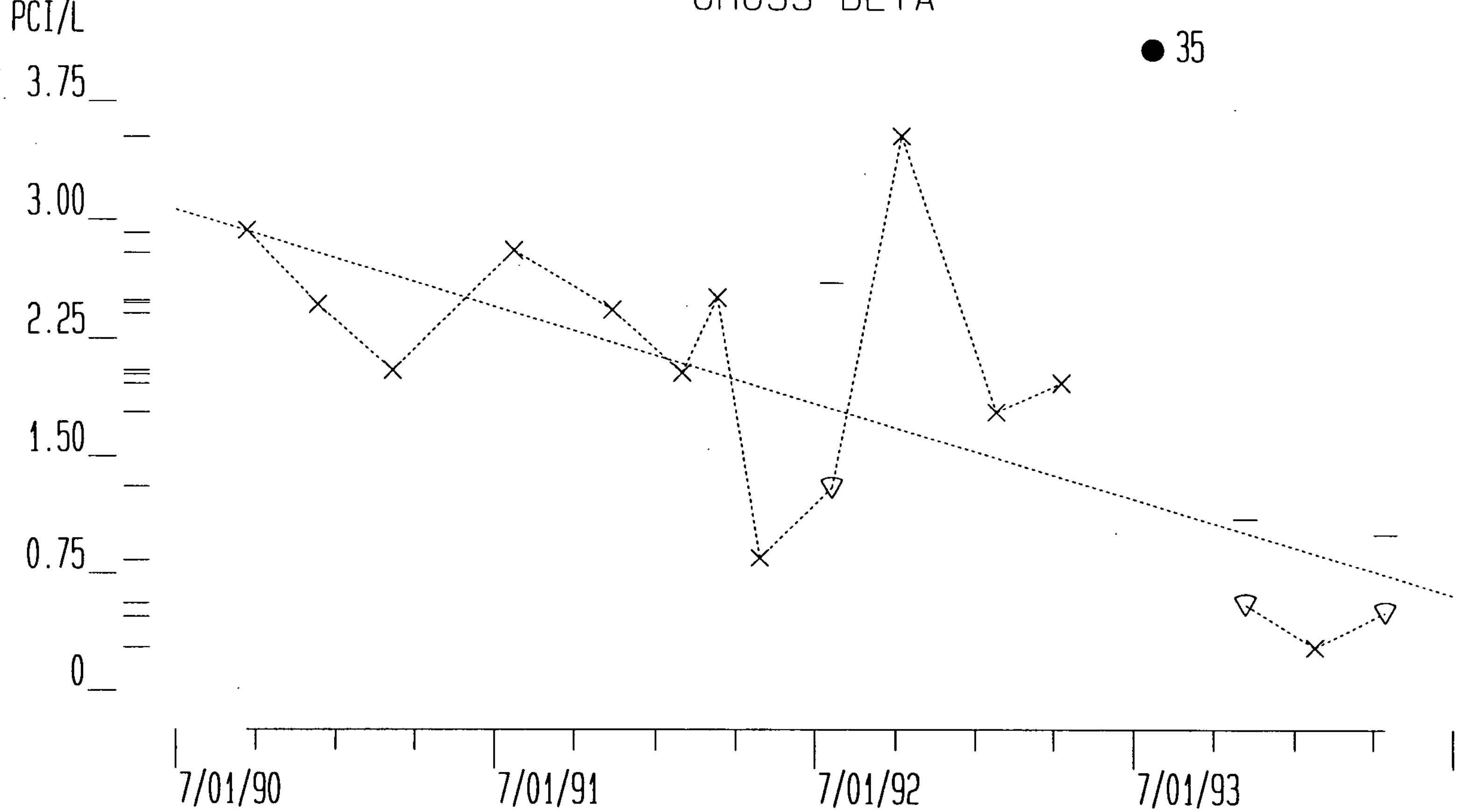
Slope of regression line is -0.4250 PCI/L per year.

Warning: High serial correlation.

January 20, 1995

West Spray Fields

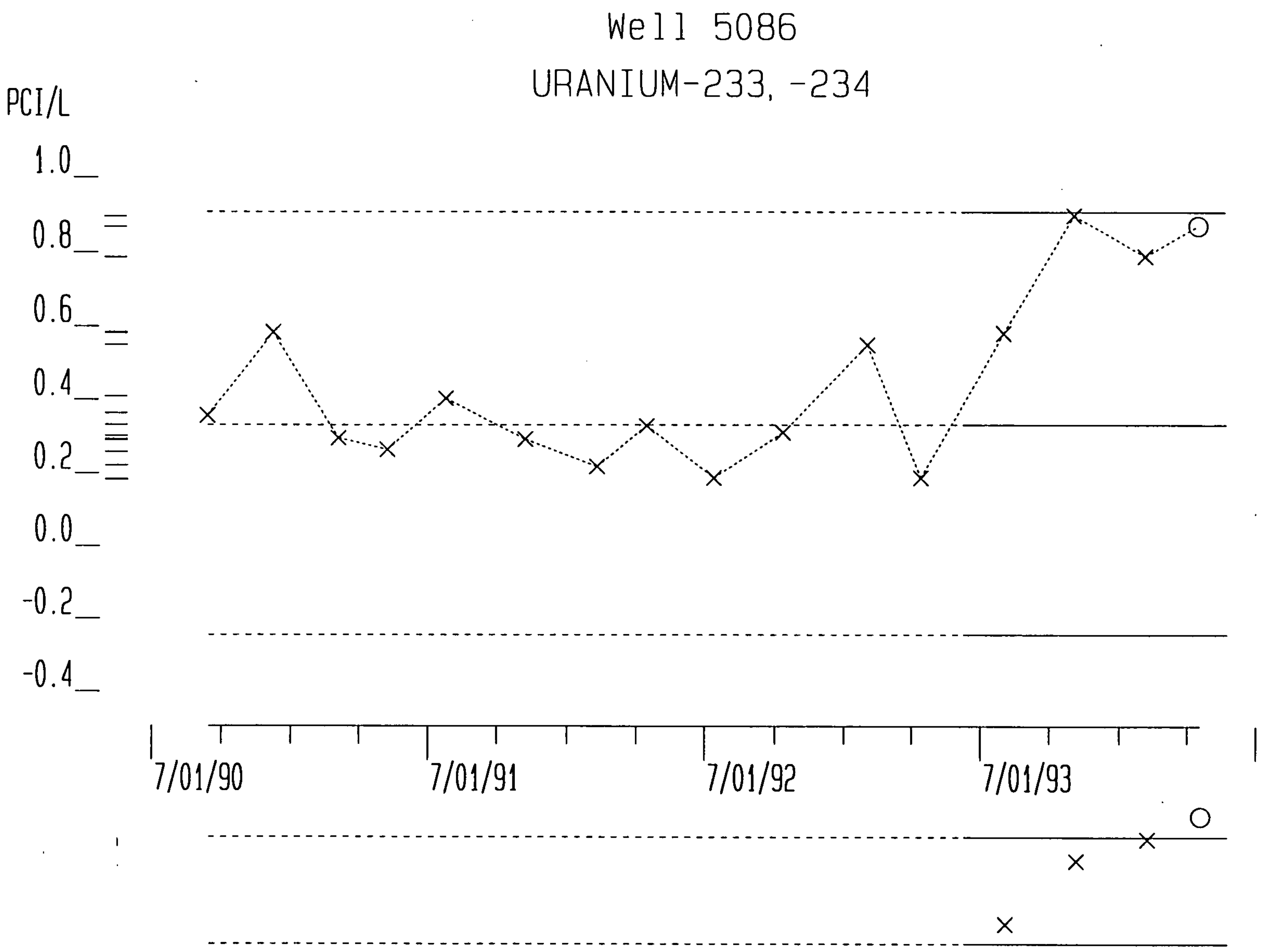
Well B110889
GROSS BETA



Slope of regression line is -0.6151 PCI/L per year.

January 20, 1995

West Spray Fields

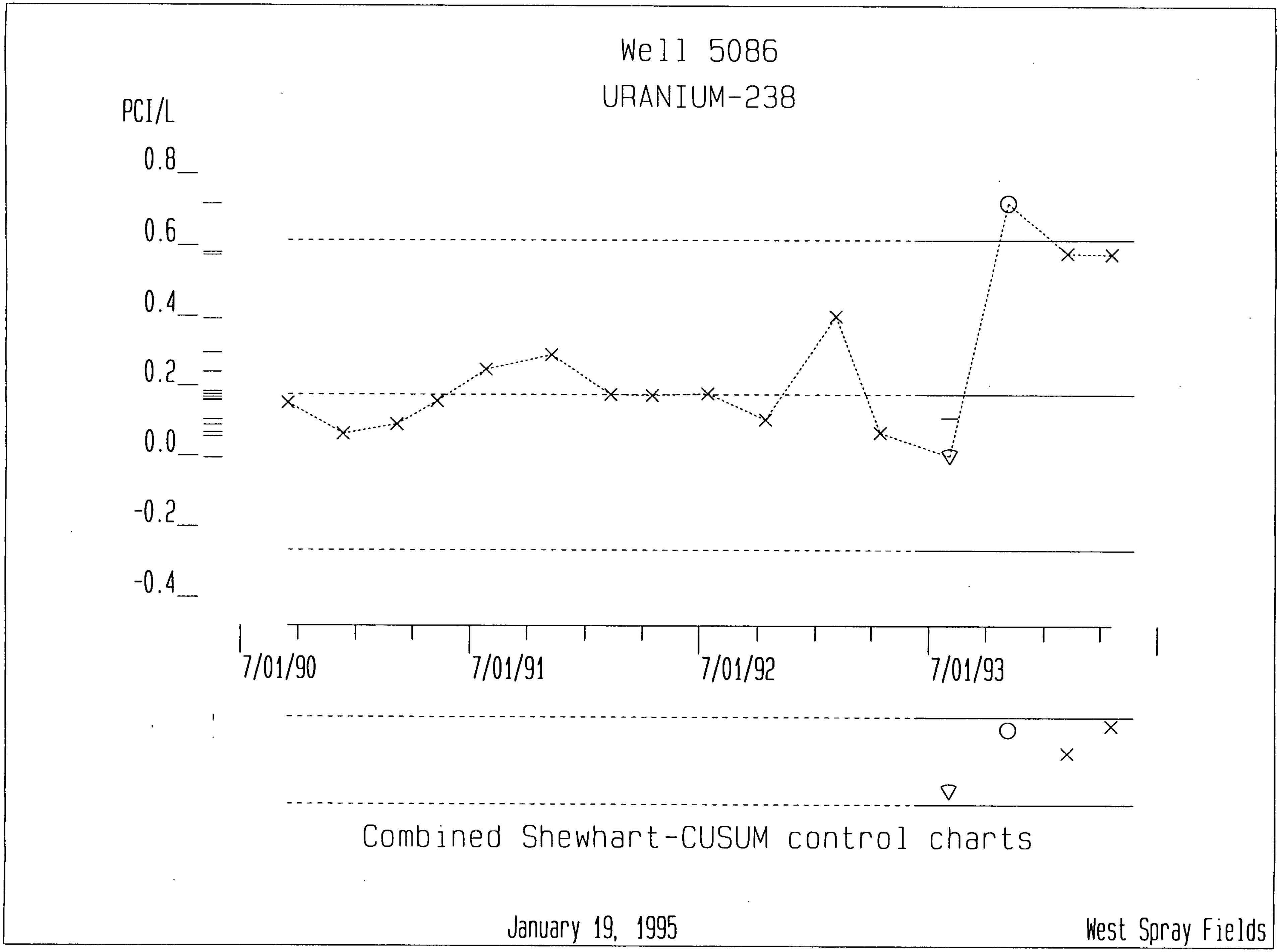


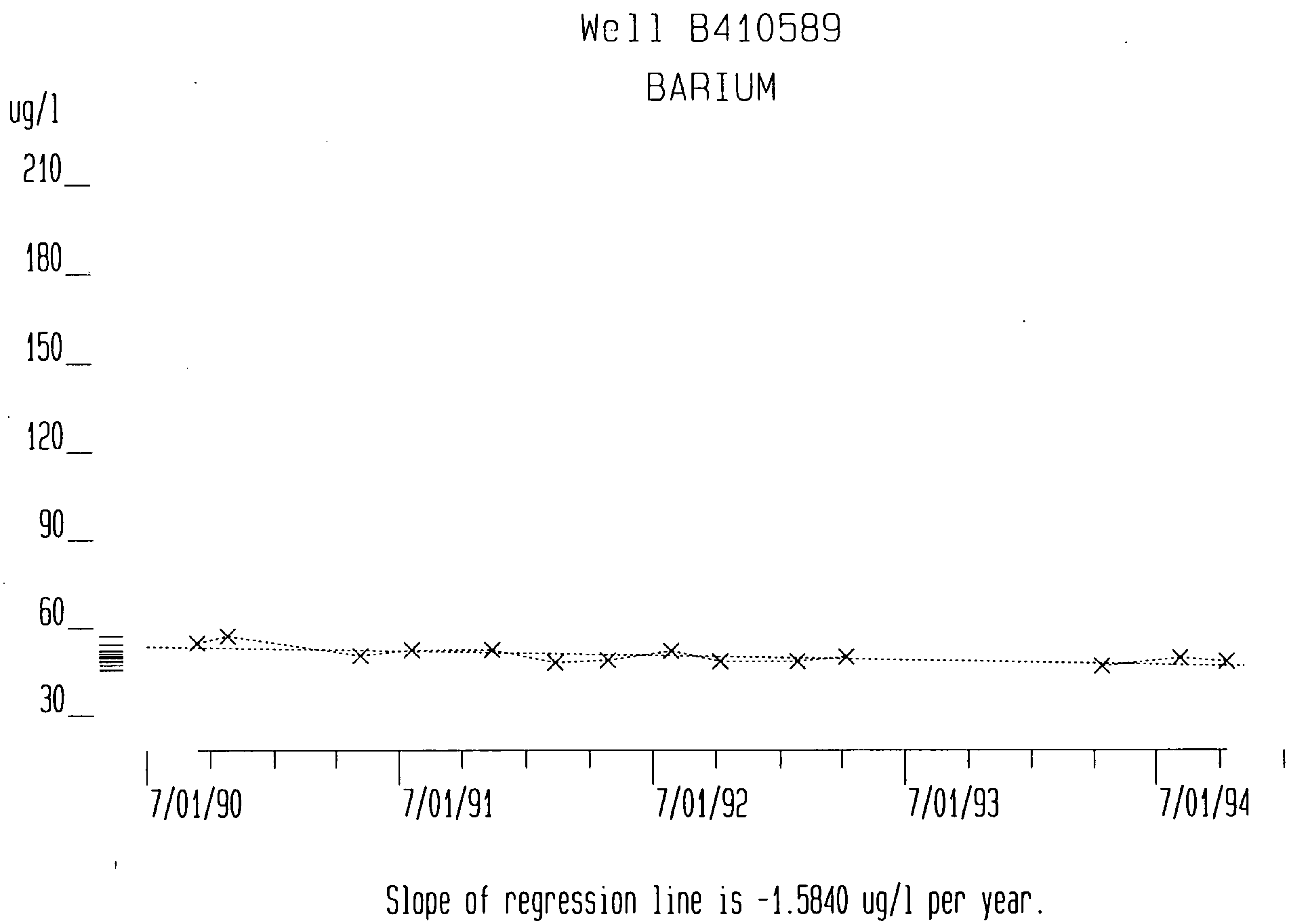
Combined Shewhart-CUSUM control charts

Warning: High serial correlation:

January 19, 1995

West Spray Fields

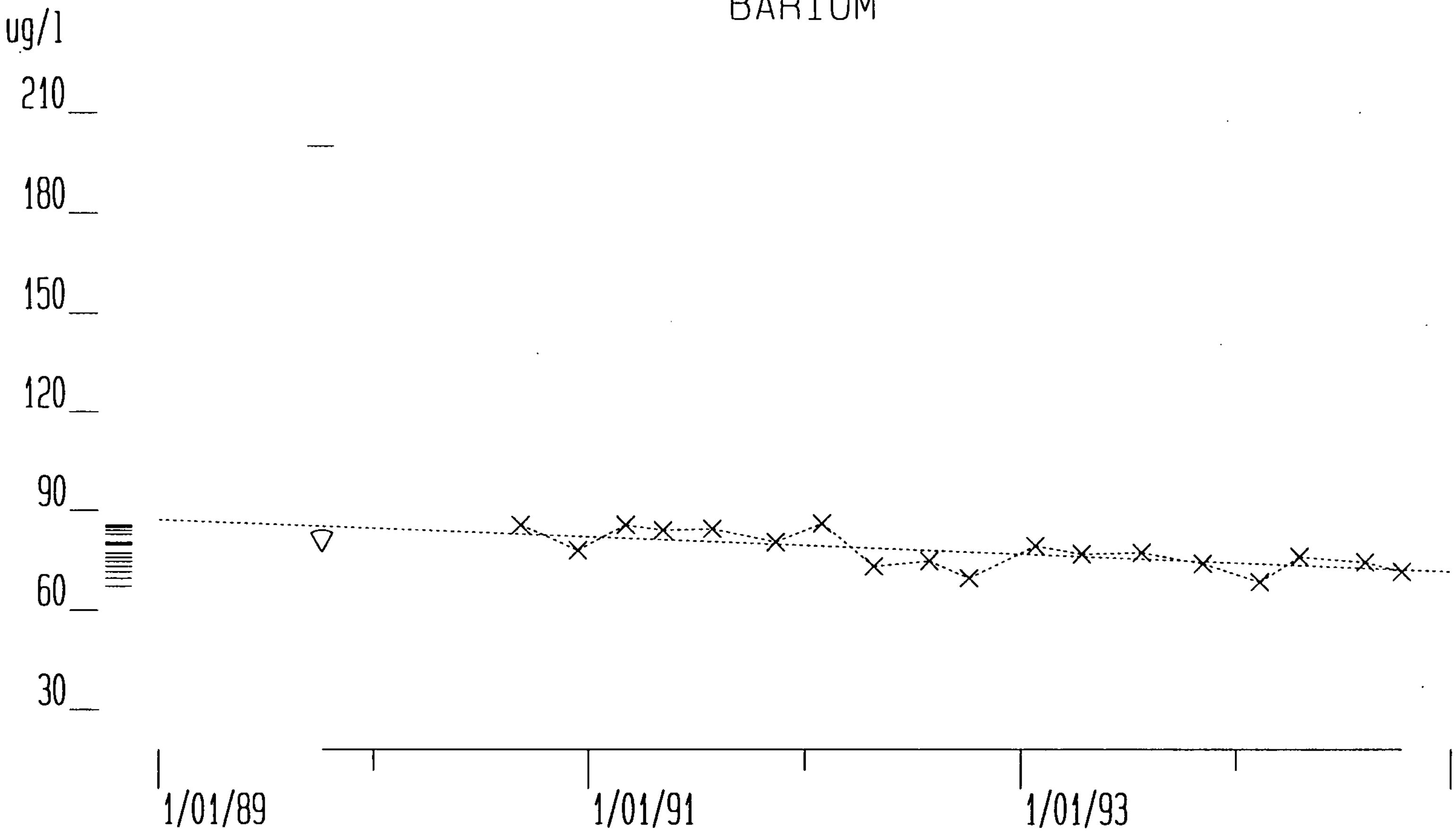

Well 5086
URANIUM-238
PCI/L
0.8
0.6
0.4
0.2
0.0
-0.2
-0.4
7/01/90
7/01/91
7/01/92
7/01/93
Combined Shewhart-CUSUM control charts
January 19, 1995
West Spray Fields



January 19, 1995

West Spray Fields

Well B410789
BARIUM

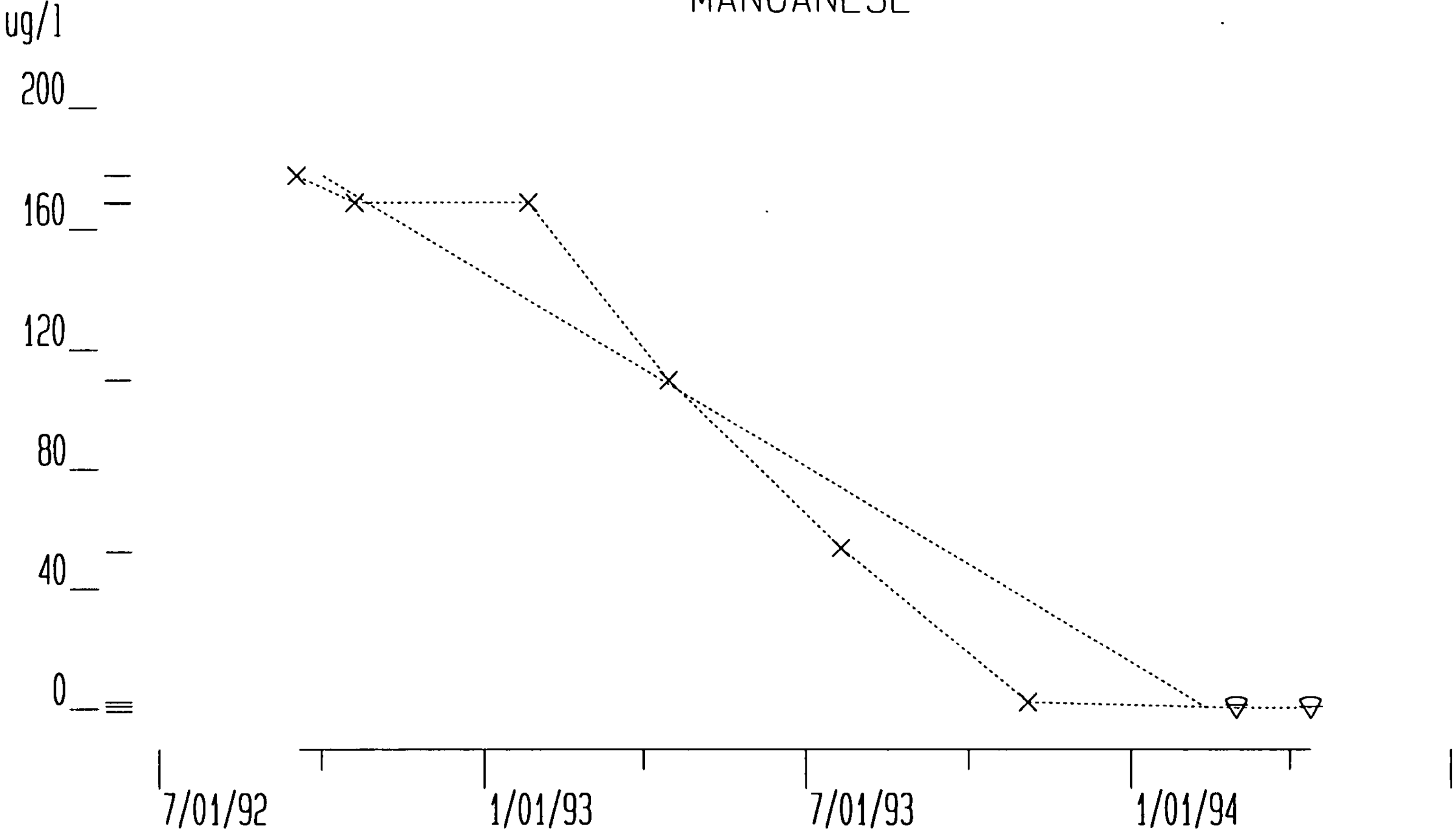


Slope of regression line is -2.6430 ug/l per year.

January 19, 1995

West Spray Fields

Well 46192
MANGANESE



Slope of regression line is -130.2782 ug/l per year.

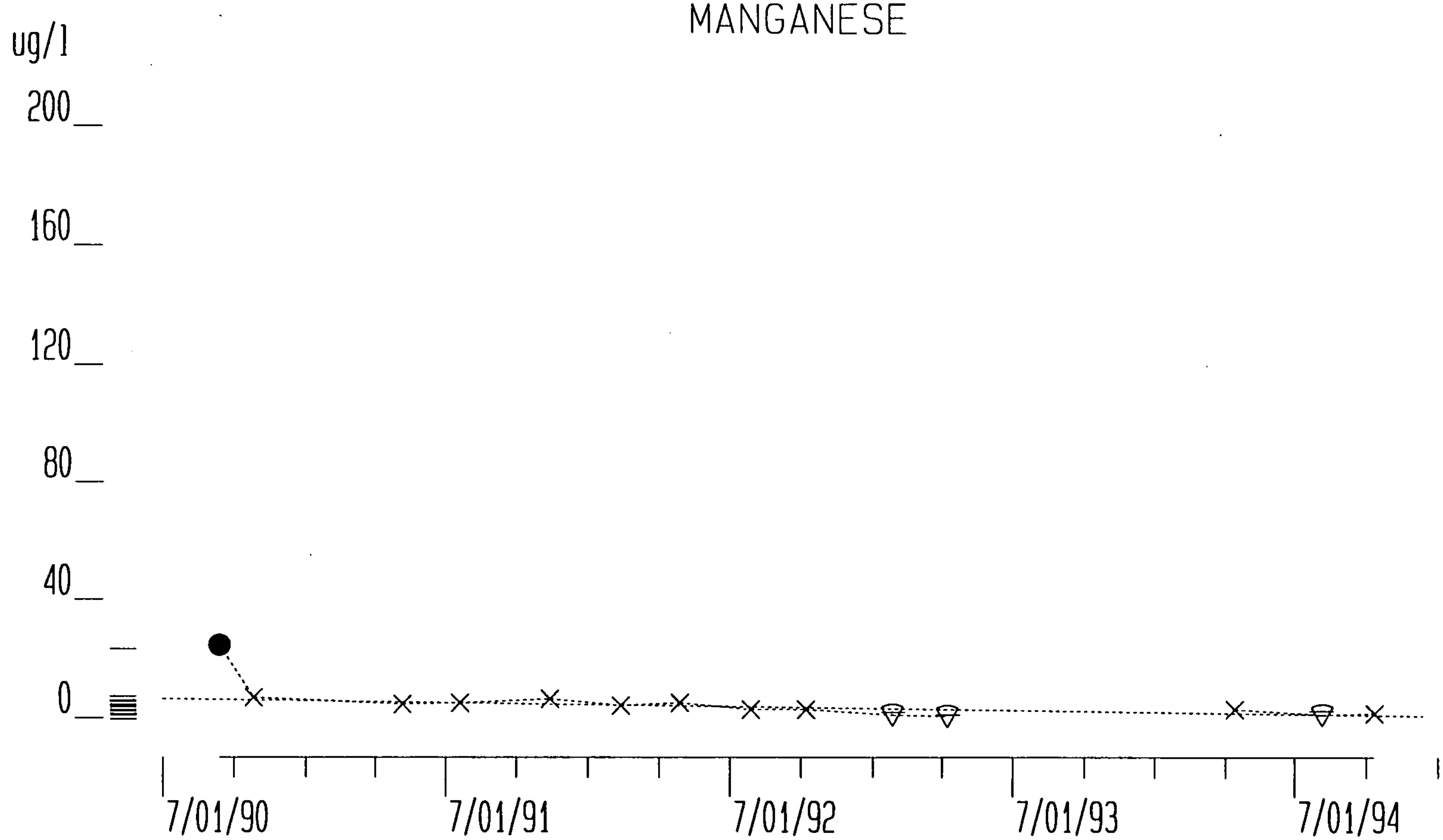
Warning: High serial correlation.

January 19, 1995

West Spray Fields

Well B410589

MANGANESE

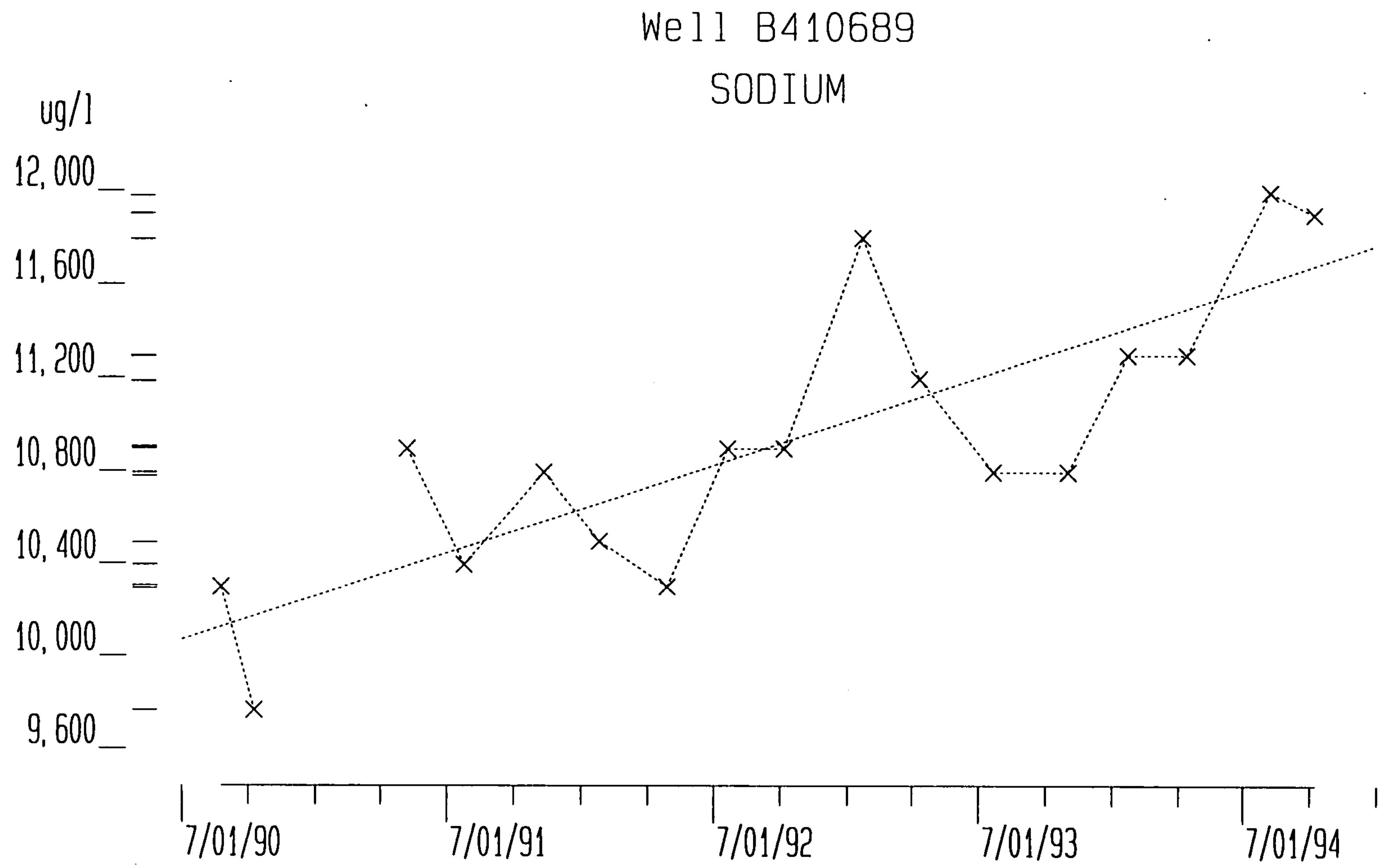


Slope of regression line is -1.3353 ug/l per year.

Warning: High serial correlation.

January 19, 1995

West Spray Fields

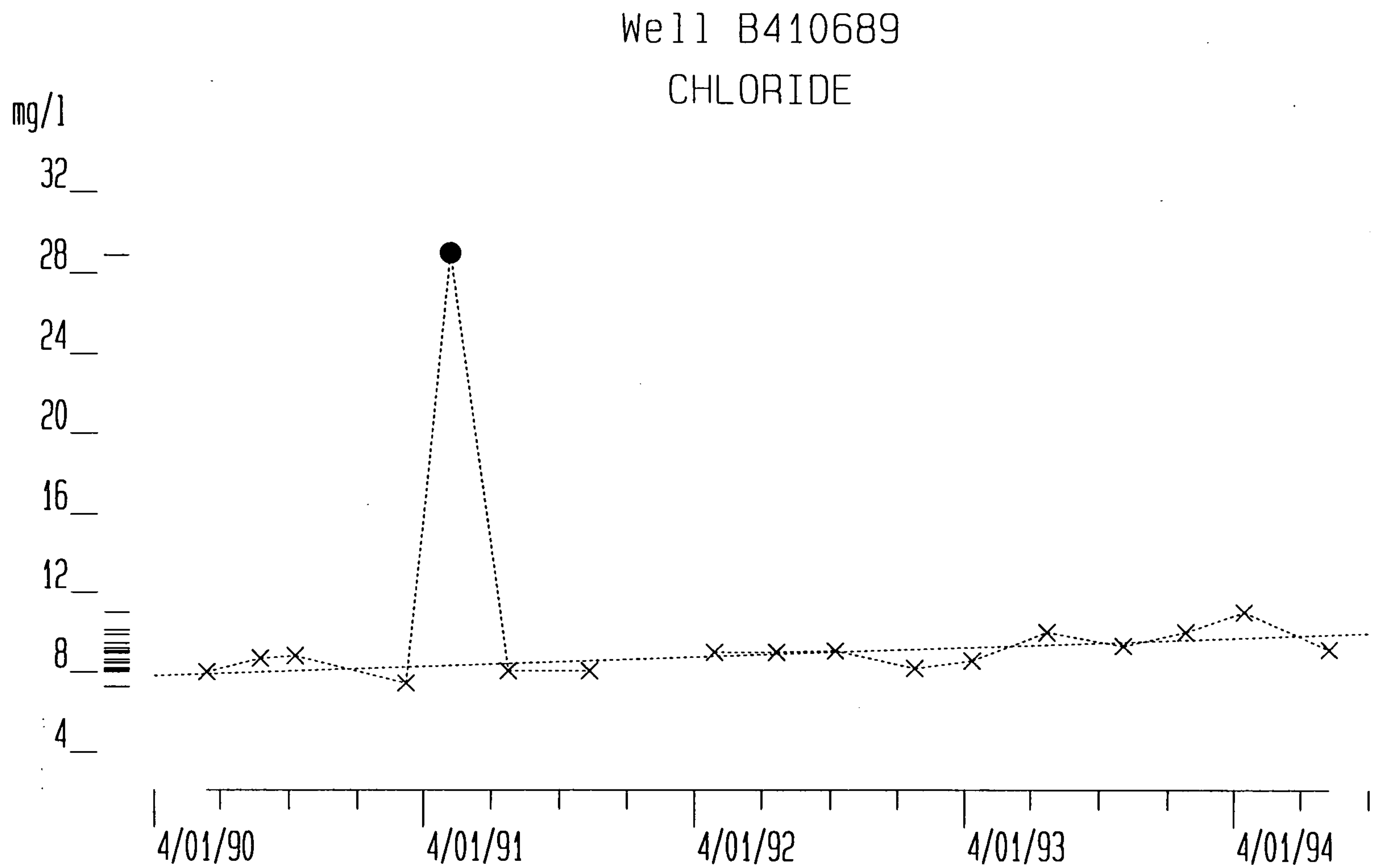


Slope of regression line is 375.7861 ug/l per year.

Warning: High serial correlation.

January 19, 1995

West Spray Fields

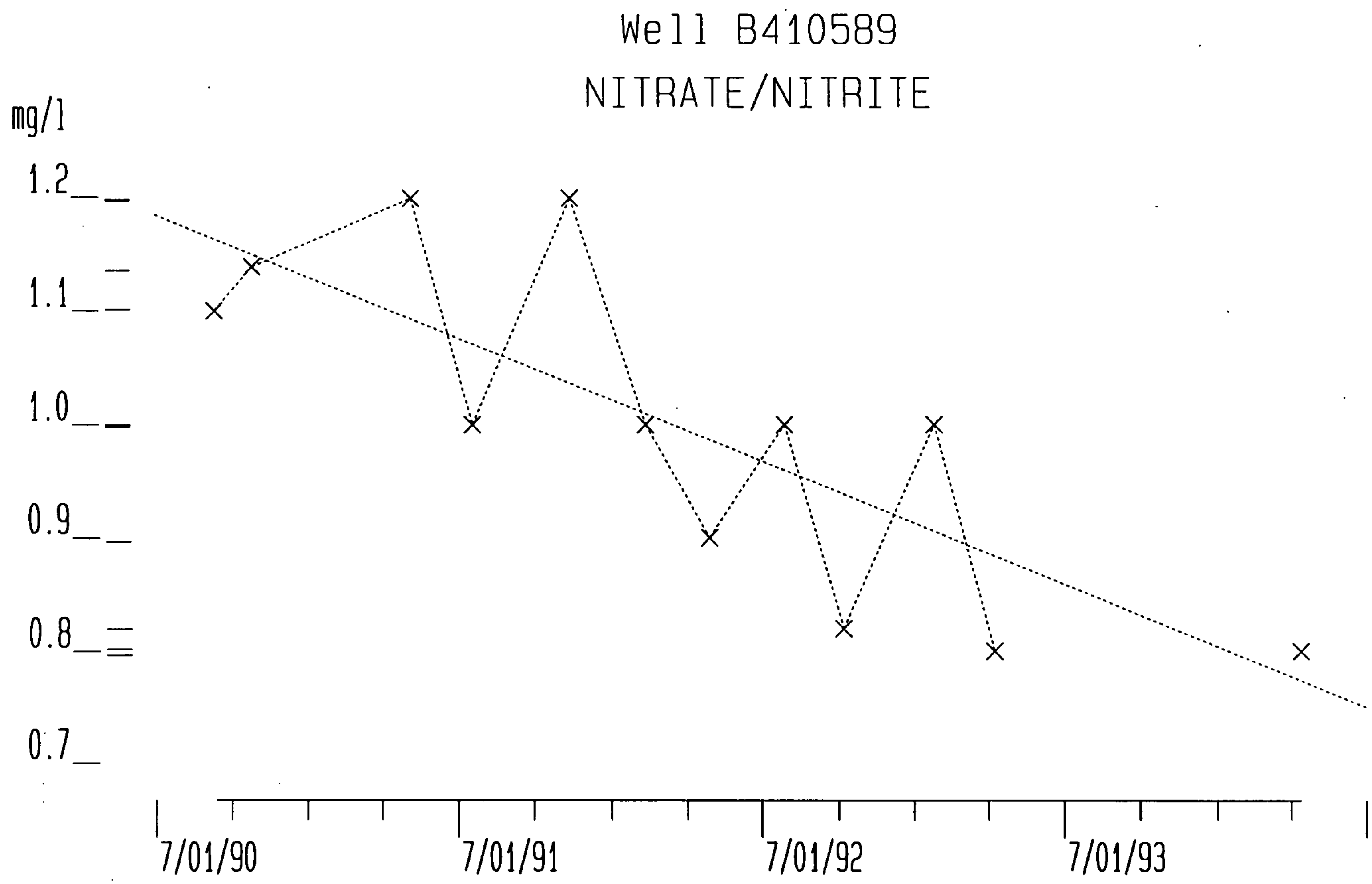


Slope of regression line is 0.4586 mg/l per year.

Warning: High serial correlation.

January 20, 1995

West Spray Field



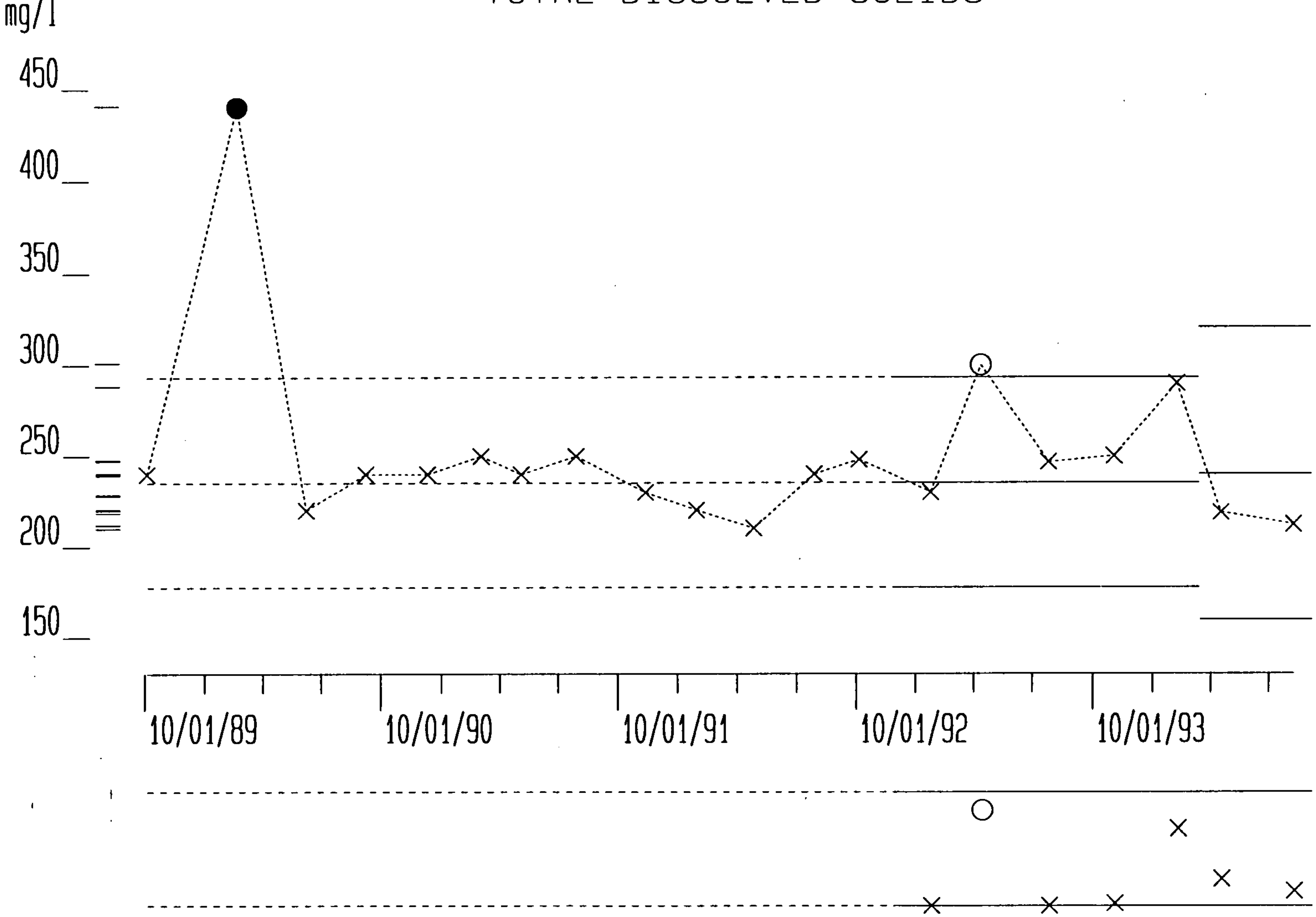
Slope of regression line is -0.1089 mg/l per year.

January 20, 1995

West Spray Field

Well B410789

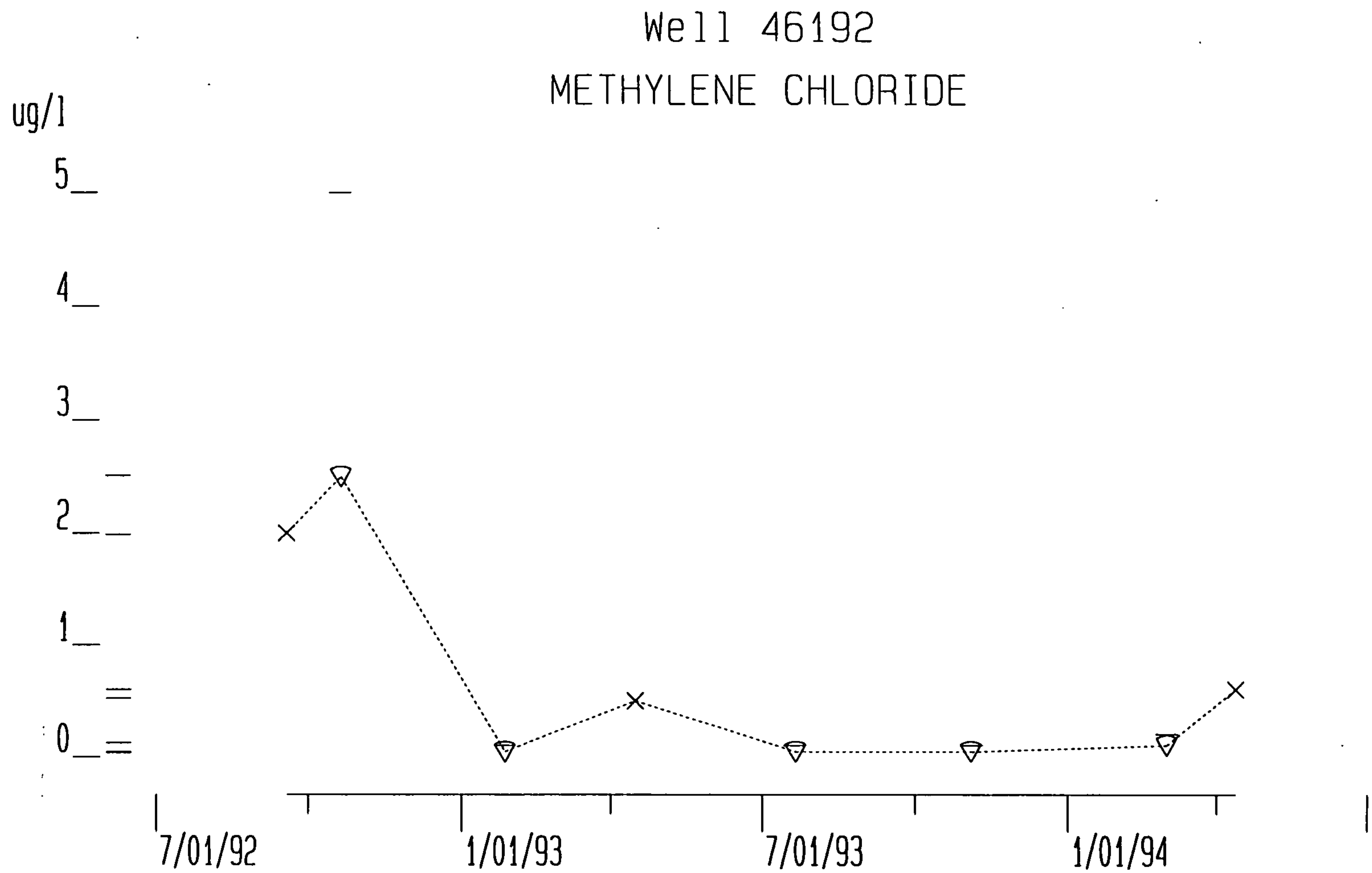
TOTAL DISSOLVED SOLIDS



Combined Shewhart-CUSUM control charts

January 20, 1995

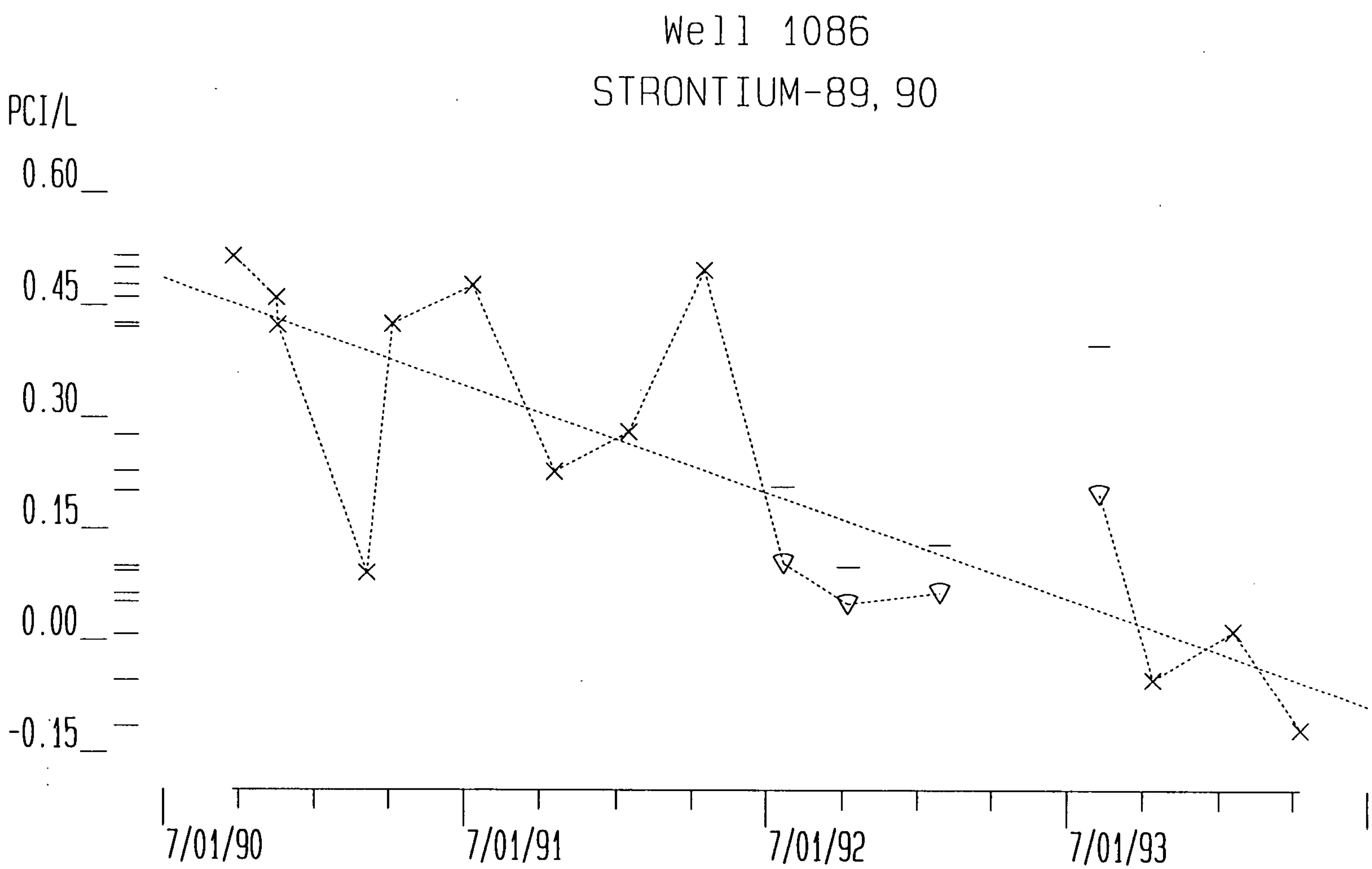
West Spray Field



Note: Control Chart not tried, More than 25% non detects.

January 20, 1995

West Spray Fields

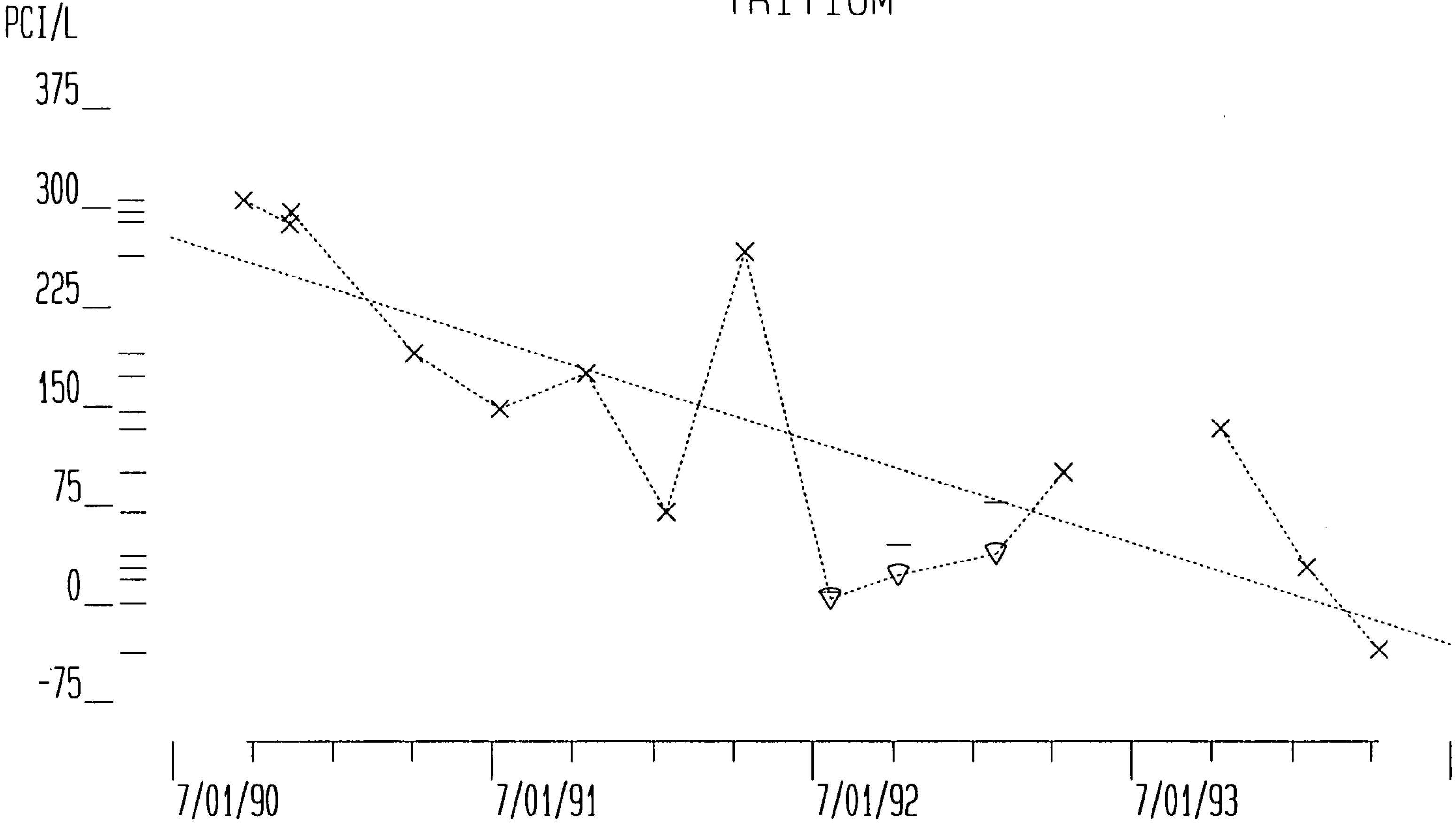


Slope of regression line is -0.1432 PCI/L per year.

January 19, 1995

Present Landfill

Well 1086
TRITIUM



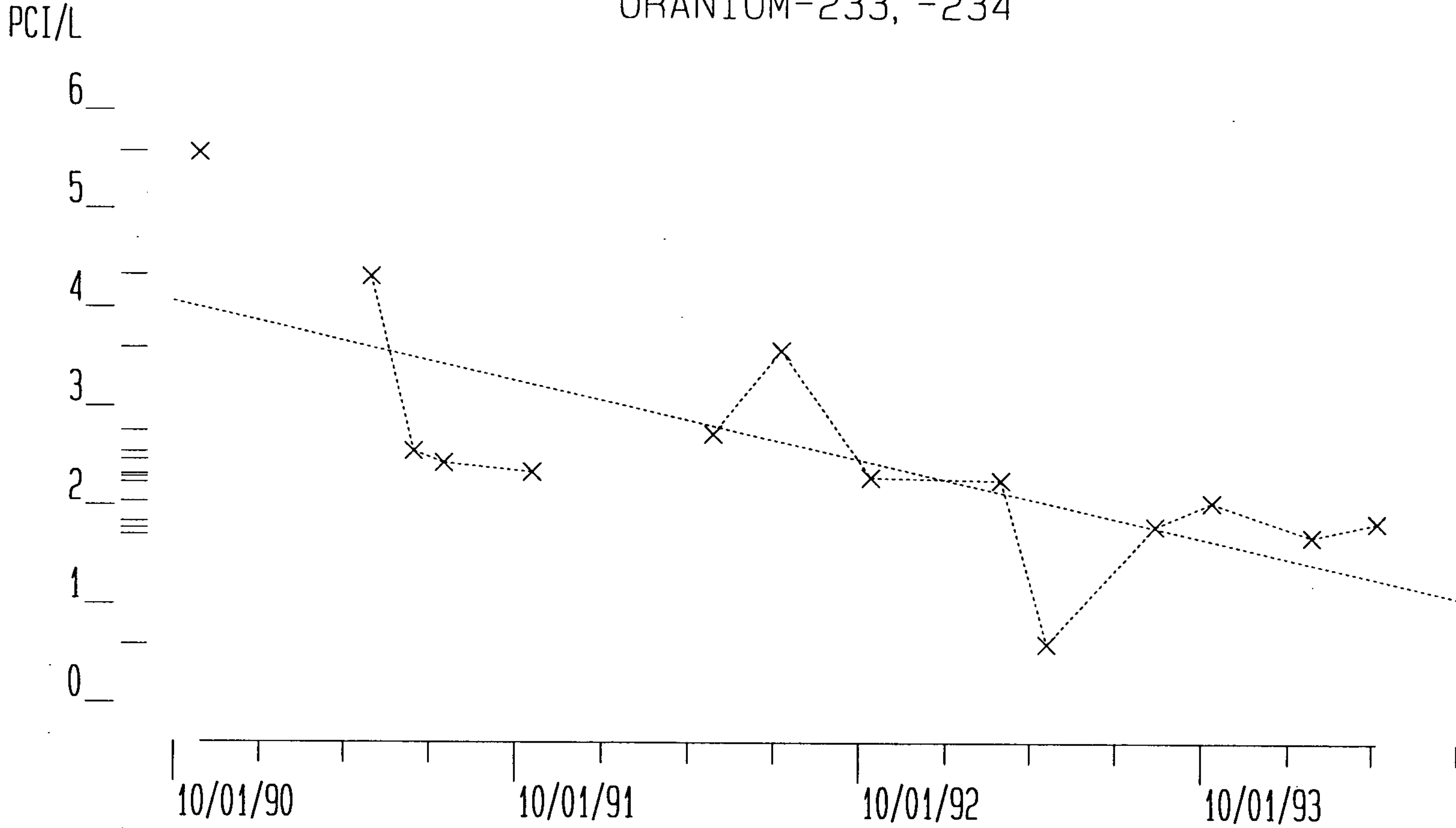
Slope of regression line is -77.3193 PCI/L per year.

January 20, 1995

Present Land Fill

Well B207089

URANIUM-233, -234



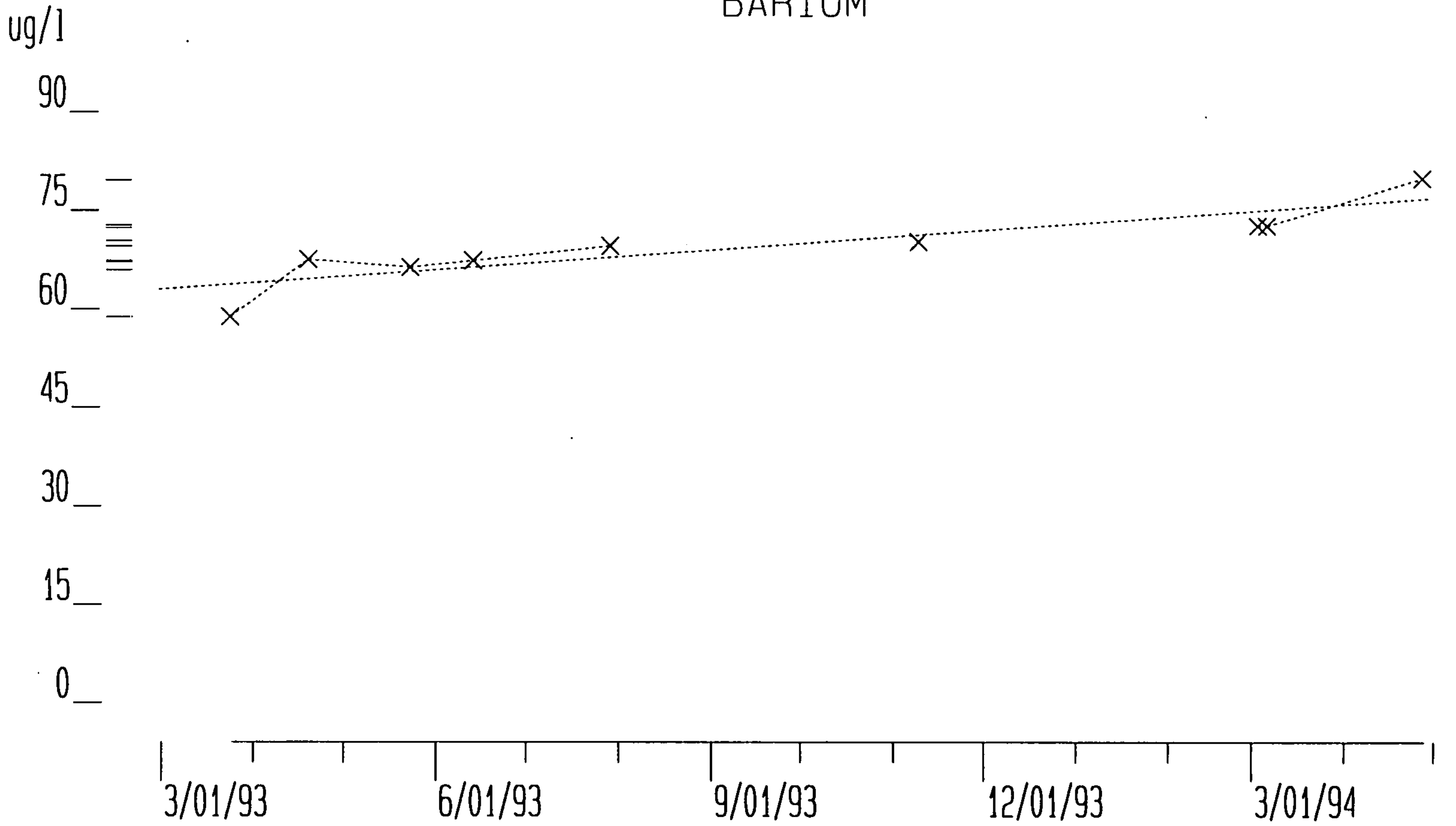
Slope of regression line is -0.7969 PCI/L per year.

January 19, 1995

Present Landfill

Well 70093

BARIUM

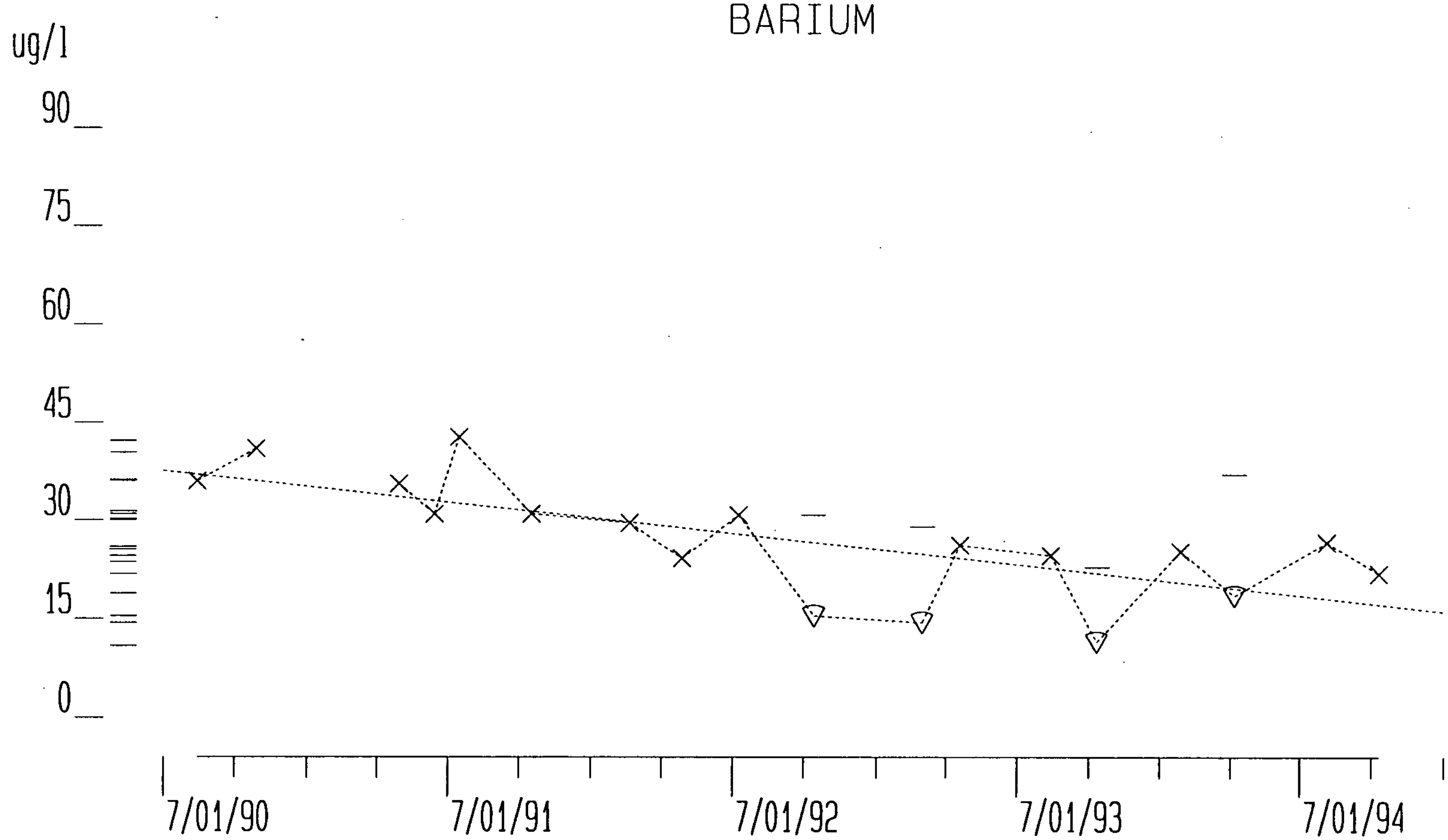


Slope of regression line is 11.8273 ug/l per year.

January 19, 1995

Present Landfill

Well B207089
BARIUM



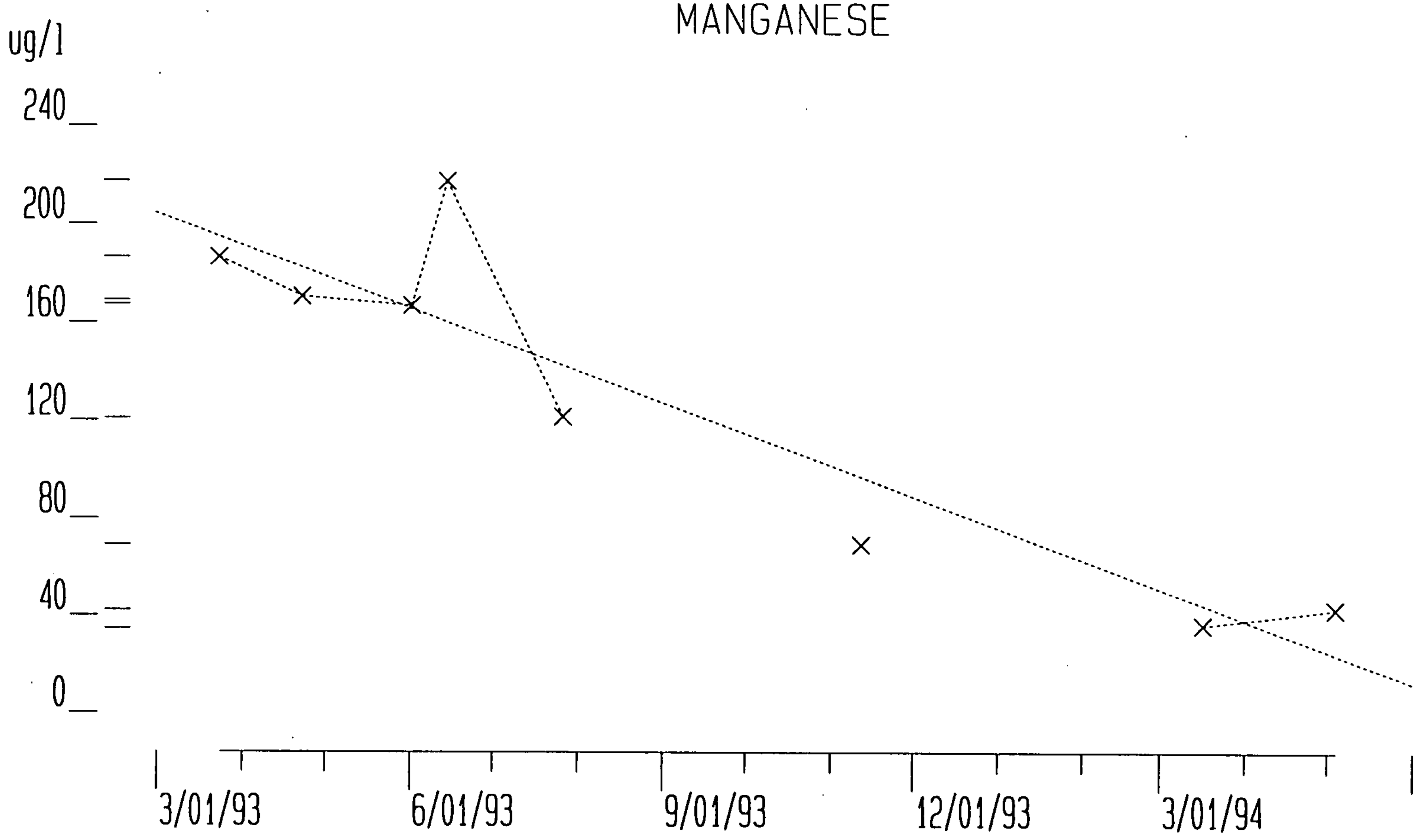
Slope of regression line is -4.8136 ug/l per year.

Warning: High serial correlation.

January 19, 1995

Present Landfill

Well 70393
MANGANESE

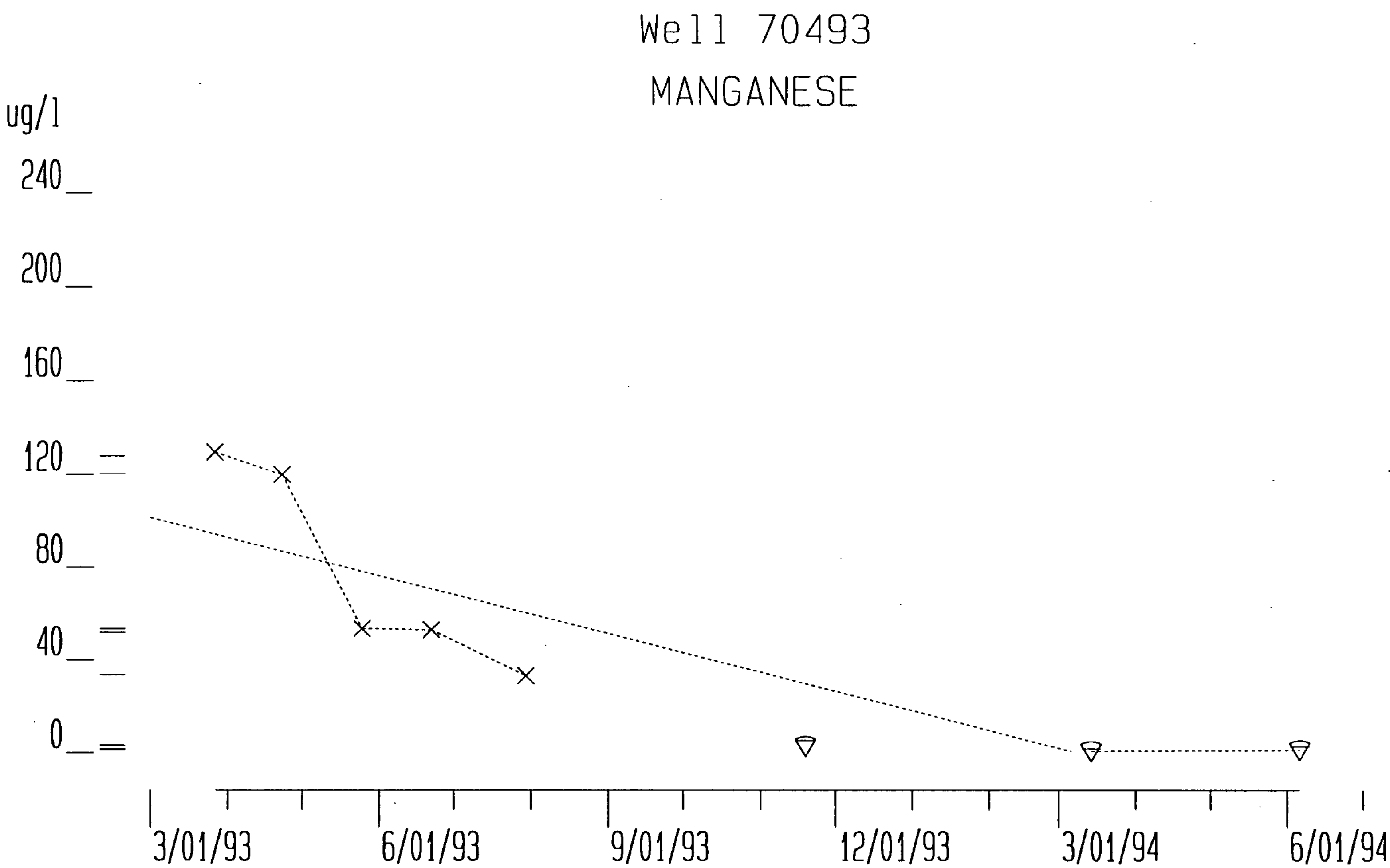


Slope of regression line is -153.7536 ug/l per year.

Warning: High serial correlation.

January 19, 1995

Present Landfill

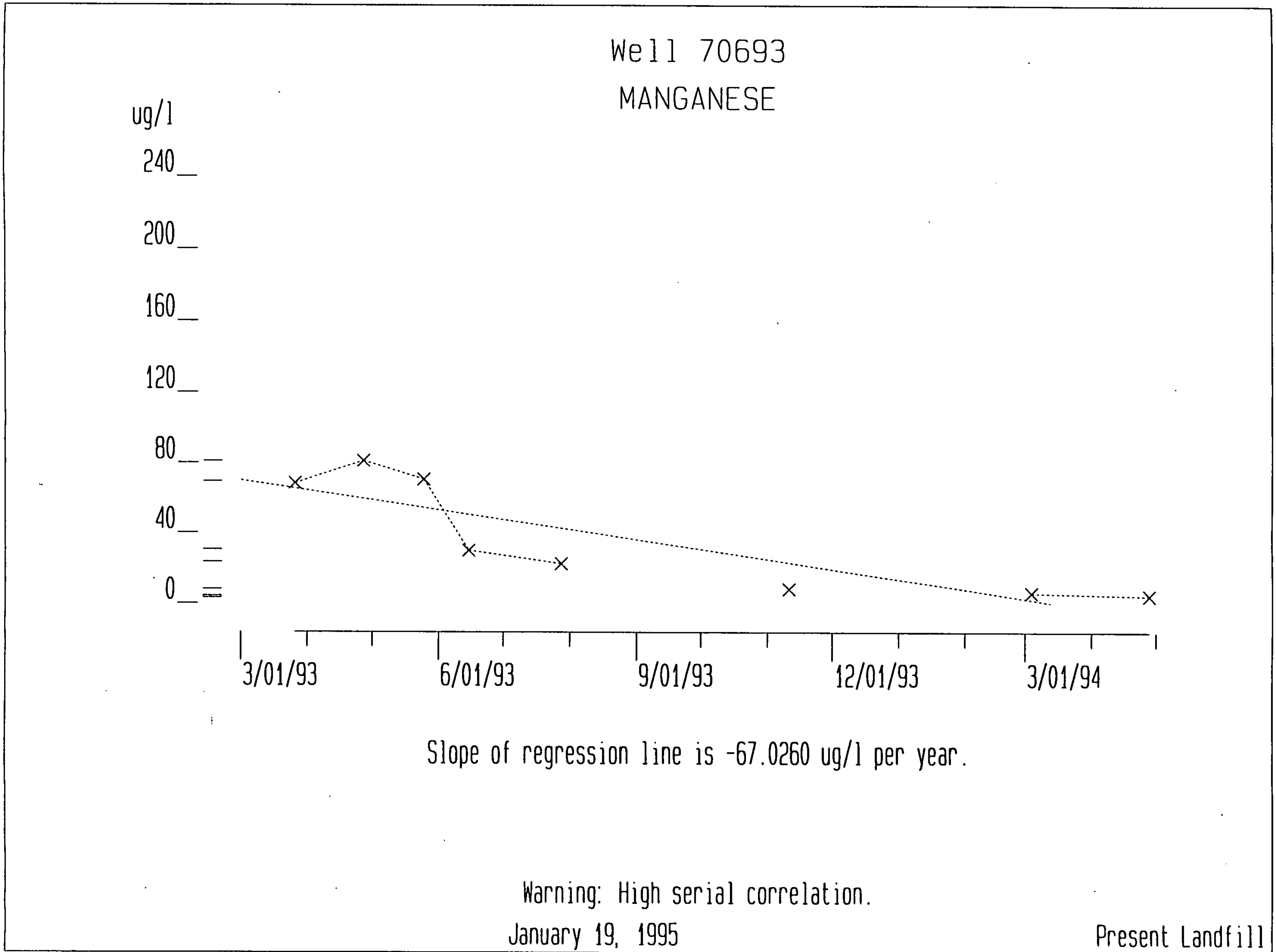


Slope of regression line is -99.1427 ug/l per year.

Warning: High serial correlation.

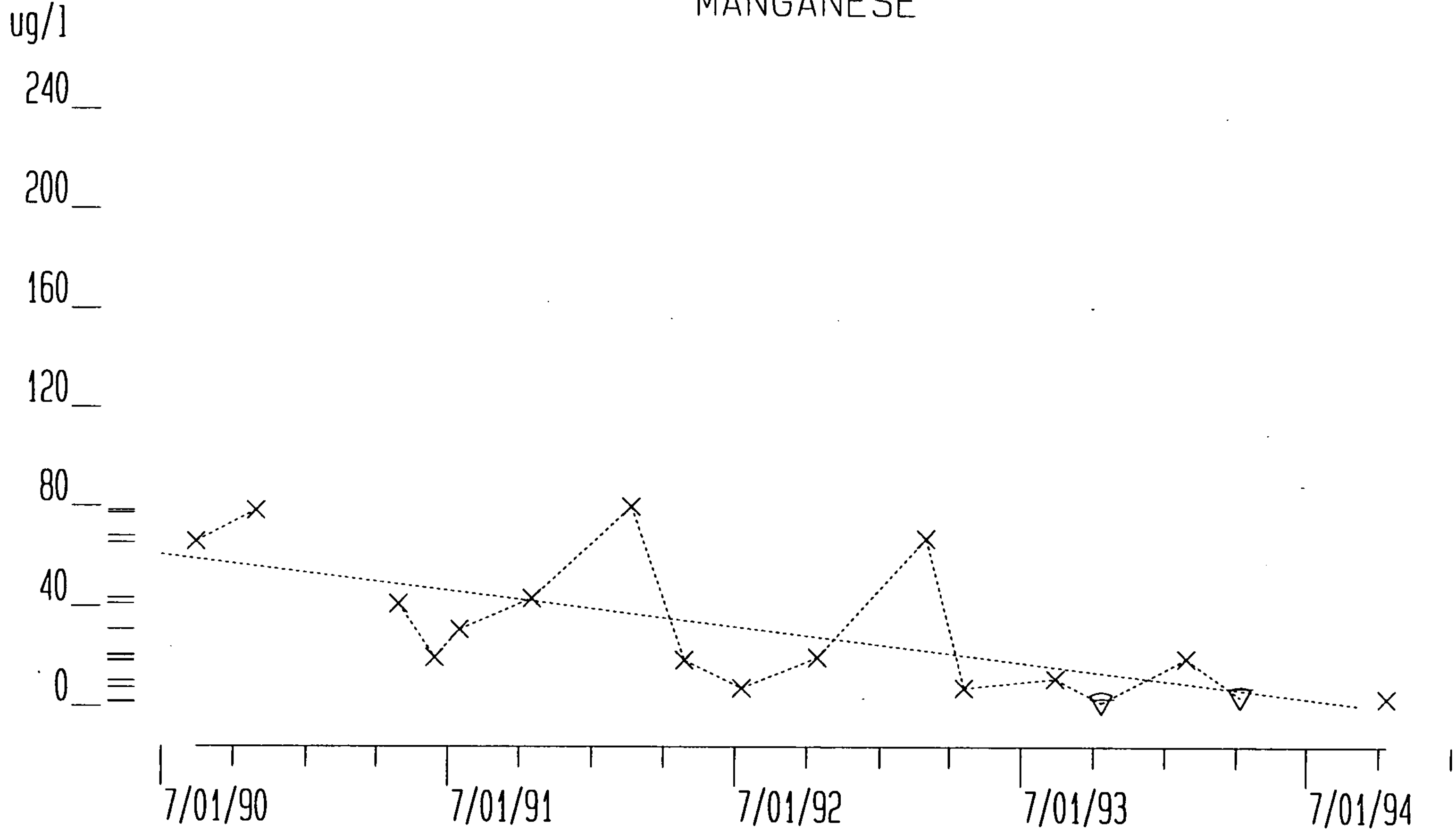
January 19, 1995

Present Landfill



Well 70693
MANGANESE
ug/l
240
200
160
120
80
40
0
3/01/93
6/01/93
9/01/93
12/01/93
3/01/94
Slope of regression line is -67.0260 ug/l per year.
Warning: High serial correlation.
January 19, 1995
Present Landfill

Well B207089
MANGANESE

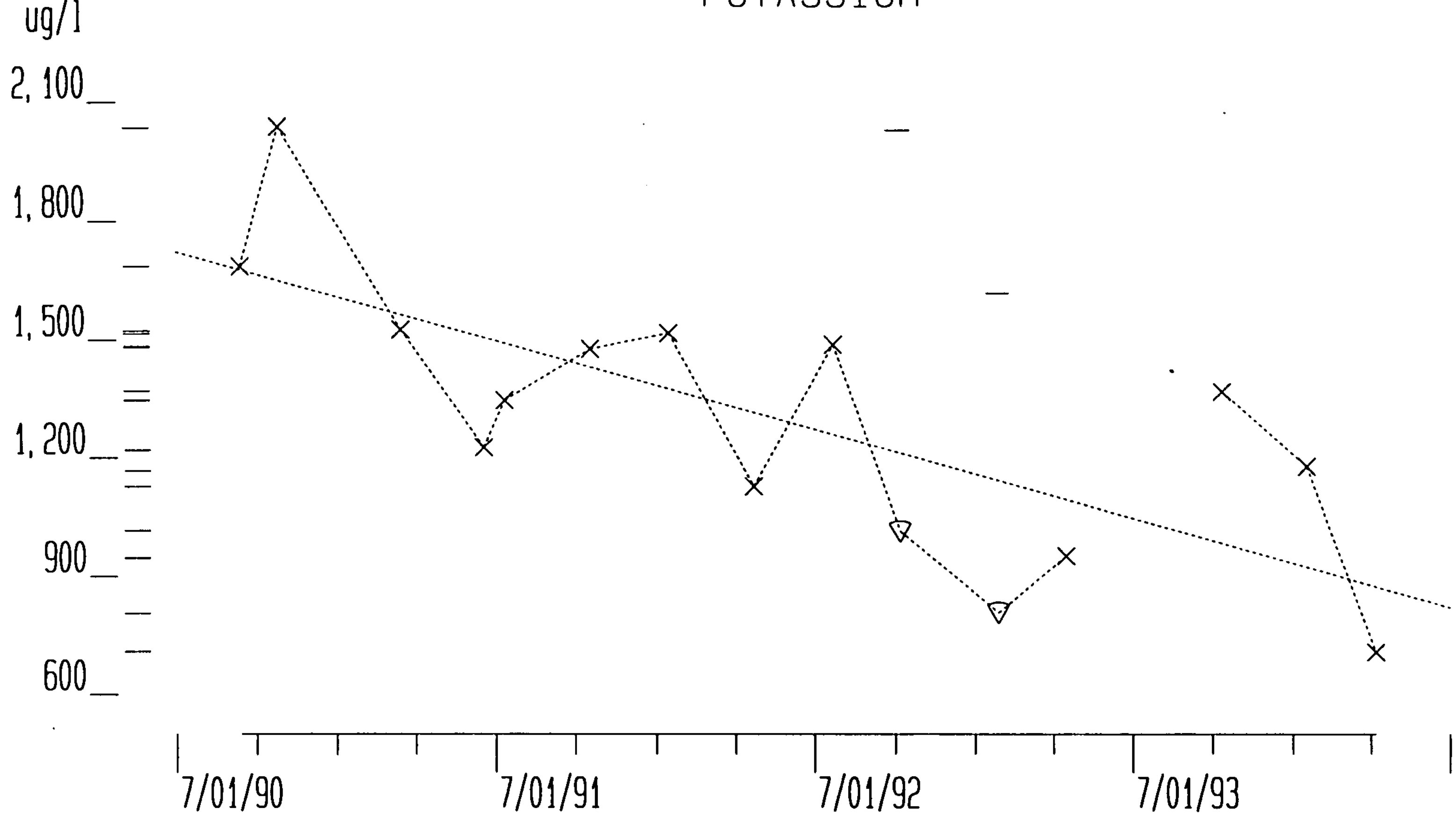


Slope of regression line is -14.3208 ug/l per year.

January 19, 1995

Present Landfill

Well 5887
POTASSIUM

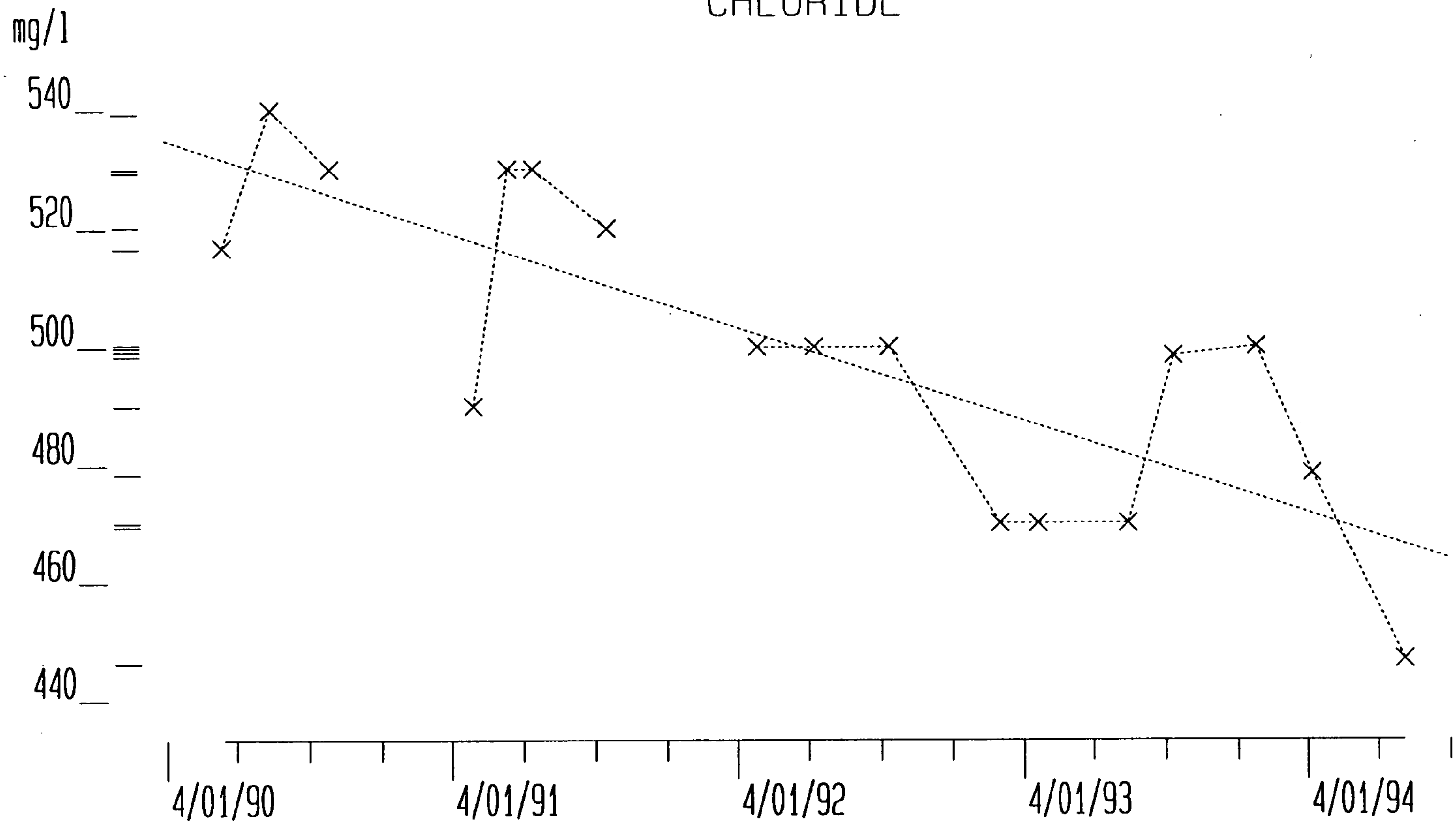


Slope of regression line is -225.9140 ug/l per year.

January 19, 1995

Present Landfill

Well B207089
CHLORIDE

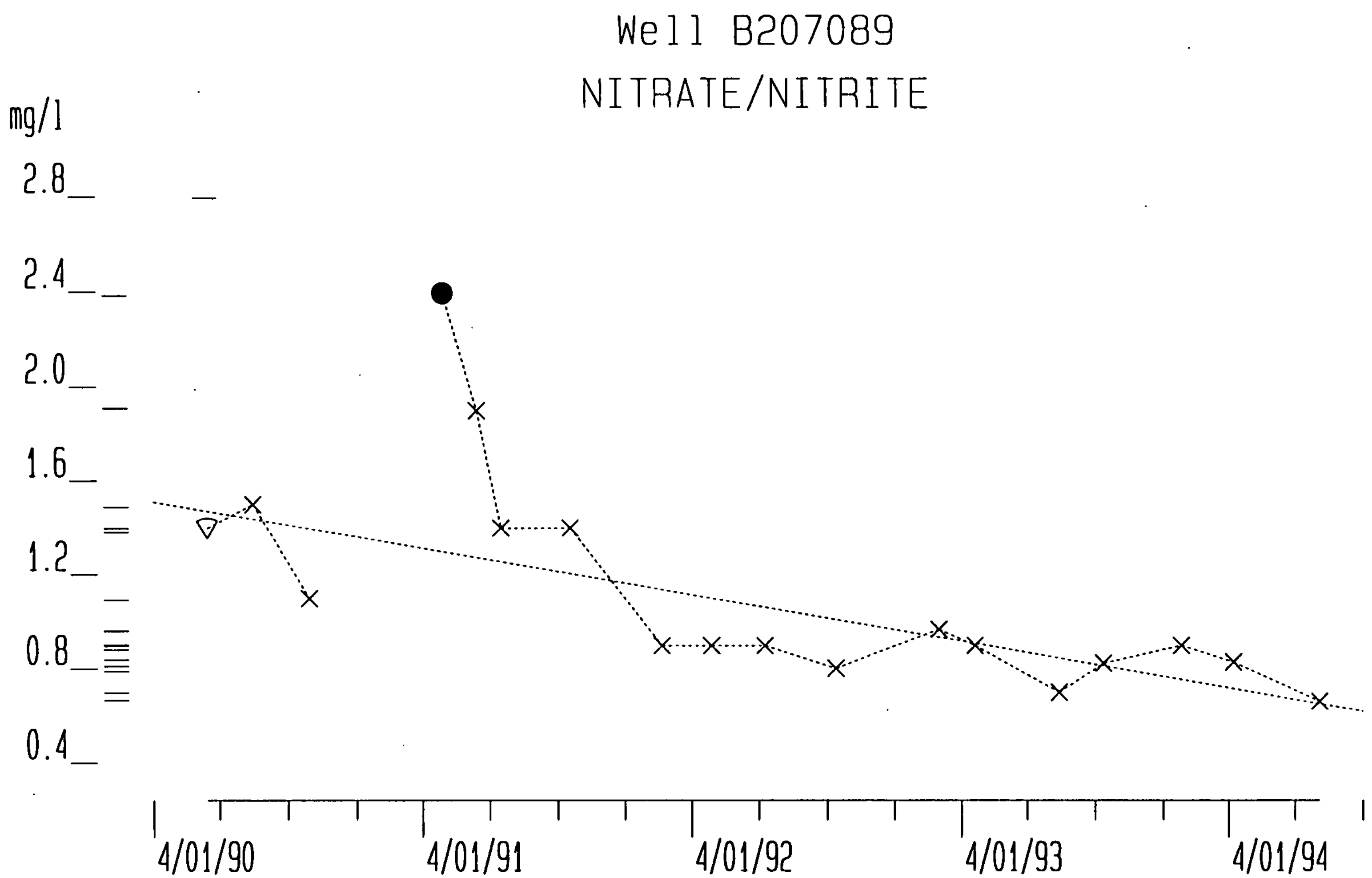


Slope of regression line is -15.8365 mg/l per year.

Warning: High serial correlation.

January 19, 1995

Present Landfill

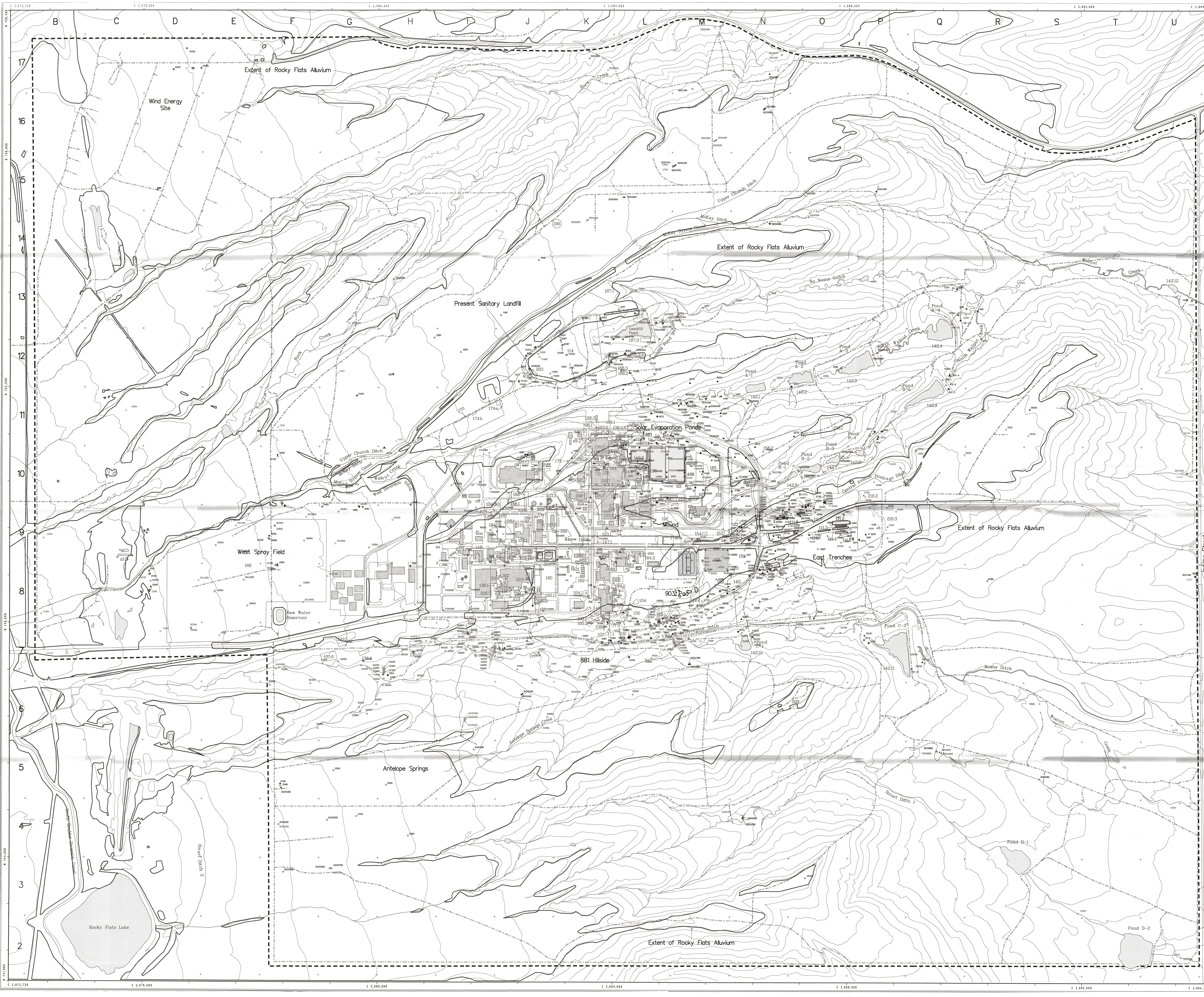


Slope of regression line is -0.1987 mg/l per year.

Warning: High serial correlation.

January 19, 1995

Present Landfill



Groundwater Monitoring Well Location Map

(Posted as of 12/1/94)

Plate 1

WELL TYPES

- Boundary-AIP Wells
- CERCLA Wells
- RCRA-S Wells
- RCRA-C Wells
- Non-GMP Wells
- Plant Protection Wells
- New Sanitary Landfill Wells

Groundwater Monitoring Program Wells

Completion Zone

- Bedrock
- Alluvium
- Alluvium/Bedrock

Inactive Groundwater Monitoring Wells

Completion Zone

- Bedrock
- Alluvium
- Alluvium/Bedrock
- Abandoned Bedrock Wells
- Abandoned Alluvium Wells
- Abandoned Alluvium/Bedrock Wells

Other

- Buildings and other structures
- Ponds and lakes
- Individual Hazardous Substance Sites
- Extent of Rocky Flats Alluvium
- Fences
- Contours (20' Intervals)
- Rocky Flats boundary
- Paved roads
- Dirt roads

DATA SOURCE:

Well locations from Geosciences spreadsheet, 12/94
Buildings, roads, and fences provided by Facilities Engr., EG&G Rocky Flats, Inc. - 1991.
Hydrology provided by USGS - (date unknown)

Scale = 1 : 4800
1 inch represents 400 feet
1 centimeter represents approximately 48 meters

250 0 500 1000ft

0 200 400 600m

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD27

U.S. Department of Energy

Rocky Flats Environmental Technology Site

Prepared by:

EG&G ROCKY FLATS

Rocky Flats Environmental Technology Site
P.O. Box 464
Golden, Colorado 80402-0464

PROJECT NO.		BY / DEPARTMENT	DATE
Groundwater	GIS Analyst	B. Todeschini DM/GIS	02/24/95
MAP ID	Checked		
GW95	Approved	T. Lovseth/Hydrogeologic Ops.	
DATE CREATED			
February 24, 1995			